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Accelerators as Boundary Spanners between Startups and Corporates

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CA	Corporate Accelerators
CI	Corporate Incubators
CVC	Corporate Venture Capital
CWS	Coworking Spaces
ECV	External Corporate Venturing
e.g.	Exempli gratia (for example)
Et al.	Et alii (and others)
Etc.	Et cetera
i.e.	Id est (that is)
MD	Managing Director
PA	Platform Accelerators
VC	Venture Capital

Abstract

Collaborating with innovative startups can be beneficial for large established corporates. However, sourcing attractive startups that strategically fit the corporate is challenging. To overcome this challenge, a new type of accelerator has recently emerged that offers a pre-cohort startup matchmaking process for corporate sponsors that is intended to foster startup collaboration projects. This platform accelerator is different from internal corporate accelerators since it functions as an independent legal entity and sources startups for multiple corporate sponsors at the same time. But how can an accelerator that is external to both worlds match corporates with applicant startups for collaboration projects? To develop theory about how platform accelerators match multiple corporates and startups, I drew on a boundary spanning and boundary organization perspective and conducted an inductive study. In my in-depth single-case study, a platform accelerator conducted a six-months matchmaking process between four corporate sponsors and initially ~1,500 scouted startups leading to corporate-startup collaboration projects. My process model shows how the accelerator created the conditions to span boundaries between asymmetric corporates and startups by establishing and re-positioning itself as a boundary organization. Additionally, the model reveals the boundaries spanned and the sequence of four key mechanisms (i.e., anticipating, structuring, fostering, and formalizing) applied by the accelerator during matchmaking to identify matches and support the realization of subsequent collaboration projects. My study extends previous research on accelerators, (external) corporate venturing, entrepreneurial support organizations, boundary spanning, and boundary organizations.

1. Introduction

"We make corporate innovation easier, by matching large corporations with the brightest startups. [. . .] [corporates can have] an active say in which types of startups are sourced, which startups are accelerated, and which startups to meet." [PLUG AND PLAY on their acceleration program for multiple corporate sponsors]

Collaboration between corporates and startups can be mutually beneficial, by helping corporates overcome their innovation inertia and startups to address their liabilities of smallness and newness (e.g., Alvarez & Barney, 2001; Hoang & Antoncic, 2003; Stuart, 2000; Stuart, Hoang, & Hybels, 1999; Weiblen & Chesbrough, 2015). For example, corporates can gain a competitive advantage by leveraging the agility, speed, and technological expertise of smaller, more innovative startups to accelerate their innovation efforts by introducing new products and technologies or enhancing their employees' entrepreneurial orientation (Doz, 1987; Hogenhuis, van den Hende, & Hultink, 2017; Weiblen & Chesbrough, 2015). Startups can benefit from corporate resources (e.g., financial resources, network) and commercial knowledge to counteract their liability of smallness and corporate reputation to counteract their limited legitimacy in the market (i.e., liability of newness; Hoang & Antoncic, 2003; Reuber & Fischer, 2005; Stuart et al., 1999; Stuart, 2000).

The collaboration and especially the initial identification, meeting, and matching between small startups and large corporates are challenging because these organization types are asymmetric in size, scale, age, and/or resource base (Kalaignanam, Shankar, & Varadarajan, 2007; Katila, Rosenberger, & Eisenhardt, 2008; Yang, Zheng, & Zhao, 2014). The asymmetry entails hurdles for (initiating) collaborations (Alvarez & Barney, 2001; Doz, 1987; Shankar & Shepherd, 2019; Yang et al., 2014). The initial identification and meeting of potential startup partners are difficult for corporates because startups commonly lack public presence, reputation (Fisher, Kotha, & Lahiri, 2016), and industry focus. Matching or selecting startups is also difficult because of the potential partners' differences in organizational types (i.e., different strategies,

business models, and cultures; Hogenhuis et al., 2017; Weiblen & Chesbrough, 2015), the startups' lack of a track record (i.e., paying customers, financial history; Fisher et al., 2016; Stuart et al., 1999), a commonly high failure rate, and a lack of resources and established processes in startups. The described factors make it difficult for corporates to evaluate the startup's true capabilities (Das & He, 2006; Kurpjuweit & Wagner, 2020). For startups, navigating corporate organizations can also be challenging, for example, due to difficulties in identifying appropriate functional units to collaborate with (Das & He, 2006). Furthermore, when negotiating collaboration terms with corporates, agile startups may encounter difficulties due to corporates' comparably slow decision-making speed and higher negotiation power (Das & He, 2006) as well as the associated threat of losing control over their technology (Katila et al., 2008; Narula, 2004). Thus, while potential benefits of corporate-startup collaboration exist, significant challenges also need to be managed when initiating collaborations.

1.1. Corporate Accelerators as a Bridge Between Corporates and Startups

The following sections offer a brief overview of the external corporate venturing research domain and the role that accelerators play as a bridge or boundary spanner in the initiation of corporate-startup collaborations (Section 1.1). Based on this understanding, I derive the research questions that guide this thesis (Section 1.2). Section 1.3 provides an overview of the data set and methodology used in this thesis, and finally, Section 1.4 describes the structure of the thesis.

To identify and collaborate with startups at different venture development stages, corporates employ external corporate venturing (ECV) vehicles such as scouting units, corporate incubators (CI), corporate (sponsored) accelerators (CA), or corporate venture capital units (CVC; Bergman & McMullen, 2021; Narayanan, Yang, & Zahra, 2009). The ECV vehicles provide general vehicle-specific startup services as well as access to the corporate's assets, services, and network (e.g., Becker & Gassmann, 2006a, Grimaldi & Grandi, 2005, Shankar

& Shepherd, 2019). Corporates establish the vehicles to transfer the startups' innovation into their organization or generate financial returns (e.g., Becker & Gassmann, 2006a, Grimaldi & Grandi, 2005, Shankar & Shepherd, 2019). Therefore, the ECV vehicles have a bridging role between corporates and startups. Past research has highlighted that ECV vehicles (i.e., scouting units, CAs) familiar with both organization types can support corporates and startups in surpassing the described collaboration hurdles (Monteiro & Birkinshaw, 2017; Shankar & Shepherd, 2019). For example, scouting units within the corporate organization support the identification of suitable startup partners across organizational boundaries (Lopez-Vega, Tell, & Vanhaverbeke, 2016; Monteiro & Birkinshaw, 2017). Incubators create bridging connections between resident startups and (external) resource providers – among other corporates (Amezcua, Grimes, Bradley, & Wiklund, 2013; Amezcua, Ratinho, Plummer, & Jayamohan, 2020; Shankar & Shepherd, 2019). While all organizations are separated by boundaries that can inhibit actors from executing tasks (Bechky, 2003; Pawlowski & Robey, 2004; Santos & Eisenhardt, 2005), asymmetric organizations such as corporates and startups may face even greater hurdles when collaborating due to differences in size, scale, resource base (Buckley & Prashantham, 2016; Kalaignanam et al., 2007), assumptions and beliefs (Birkinshaw, Ambos, & Bouquet, 2017), organizational practices (O'Mahony & Bechky, 2008; Perkmann & Schildt, 2015), or hierarchical relationships (Colman & Rouzies, 2019).

One comparably novel ECV vehicle that aims to foster the engagement of corporates with early-stage startups is the CA (Bergman & McMullen, 2021; Shankar & Shepherd, 2019). Similar to general accelerators, CAs are distinct from the other vehicles, especially incubators, in their startup support model (e.g., a focus on entrepreneurial learning through mentoring, coaching, and training; Hallen, Cohen, & Bingham, 2020) and design (e.g., cohort structure and program fixed duration; Shankar & Shepherd, 2019). Additionally, they offer corporates the opportunity to select high-potential startups that fit their strategic goals through a rigorous

sourcing and selection process, engage with the startups as coaches or mentors in the cohort, or even conduct a collaboration project as part of the program (Cohen, Fehder, Hochberg, & Murray, 2019b; Shankar & Shepherd, 2019). After the acceleration period, some corporates continue to collaborate with startups conditional on the support of relevant business units (Kramer & Kanbach, 2023). The nascent CA literature is informed by literature on general accelerators studying program design (Cohen et al., 2019b; Shankar & Shepherd, 2019) and its impact on participant-startup outcomes (Chan, Patel, & Phan, 2020; Cohen et al., 2019b; Cohen, Bingham, & Hallen, 2019a; Gonzalez-Uribe & Leatherbee, 2018; Hallen et al., 2020; Yu, 2020). The general accelerator literature identifies that pre-cohort startup selection is an important process leading to a sorting effect that partially explains the positive outcomes of startups' accelerator participation for startups (Cohen et al., 2019b; Hallen et al., 2020); however, the literature does not understand how the process works (Cohen et al., 2019b; Shankar & Shepherd, 2019).

Corporates run internal CAs, and they also sponsor external programs (Cohen et al., 2019b; Shankar & Shepherd, 2019). Recently, a new type of external accelerator has emerged that not only aims to foster startup performance but acts as a platform connecting the applicant startups with multiple corporate sponsors. The independent, corporate-external accelerators—such as Plug and Play—build their business models on sourcing startups in the pre-cohort phase to match them with corporate sponsors for collaboration projects. Corporates sponsor the accelerator programs to benefit from the startup collaboration projects. The accelerators identify suitable partners, create connections, and enable cooperation between corporates and startups, thereby acting as matchmakers between two worlds. This new accelerator type is not a classical ECV vehicle due to its location outside the corporate organization, but rather it is an entrepreneurial support organization "whose primary purpose is to support individuals and collectives, through (in)direct and (im)material assistance, as they seek to initiate and progress

through the stages of the entrepreneurial process" (Bergman & McMullen, 2021, p. 3). But the accelerator type supports the ECV definition in that it helps corporates in the "creation of new businesses […] in which a corporation leverages external partners in an equity or nonequity interorganizational relationship" (Schildt, Maula, & Keil, 2005, p. 496).

Different literature streams have recognized a bridging or boundary spanning role of ECV vehicles and entrepreneurial support organizations (e.g., Amezcua et al., 2013; Amezcua et al., 2020; Monteiro & Birkinshaw, 2017; Shankar & Shepherd, 2019). However, we do not understand the process, mechanisms, and conditions applied to bridge between asymmetric organizations—especially in the pre-cohort sourcing process. Literature on entrepreneurial support organizations highlights incubators' bridging and curating role between participating startups and other firms or resource providers (Amezcua et al., 2013; Amezcua et al., 2020), but it does not specify how the role is enacted. For corporate internal accelerators, Shankar and Shepherd (2019) offer a description of structures and mechanisms employed to connect corporates and startups during the pre-cohort sourcing process (e.g., corporate employees in the selection jury). While the study suggests that this process enables mutual evaluation of corporates and startups (i.e., matchmaking), it does not outline the particular mechanisms. Additionally, while we know that legitimacy, knowledge, and relationships (Colman & Rouzies, 2019; Kislov, Hyde, & McDonald, 2017; Monteiro & Birkinshaw, 2017) are necessary conditions that organization-internal actors establish for spanning boundaries, we do not understand how external organizations create these conditions.

In summary, we do not understand how pre-cohort sourcing works in general and matchmaking in CAs. Additionally, we do not know how associated bridging or boundary spanning between asymmetric organizations works in ECV vehicles or entrepreneurial support organizations.

Understanding the startup sourcing and selection process in CAs (Cohen et al., 2019b; Shankar & Shepherd, 2019) as well as the underlying bridging or boundary spanning conditions, structures, and mechanisms is important for theory and practice. First, the accelerators' startup sourcing and selection process likely has implications for understanding the vehicles' and accelerated startups' performance (Hallen et al., 2020), which is important given the increasing distribution of CAs (Cohen et al., 2019b; Shankar & Shepherd, 2019). Second, a comprehensive understanding of boundary management between asymmetric organizations is relevant given the ubiquity of other ECV vehicles or entrepreneurial support organizations (e.g., incubators) reliant on external sponsors (Bergman & McMullen, 2021). Therefore, my research has broad implications for our understanding of (corporate) accelerators, (external) corporate venturing, entrepreneurial support organizations, and, more broadly, the management of organizational boundaries.

The new type of accelerator offers an interesting context to study how ECV vehicles and entrepreneurial support organizations help corporates and startups initiate collaborations by bridging asymmetries and associated hurdles. First, in contrast to CAs established as an internal unit of one parent corporate (Cohen et al., 2019b; Ream & Schatsky, 2016; Shankar & Shepherd, 2019), this new accelerator type is an independent legal entity that is sponsored by multiple changing corporate partners. Therefore, the entity needs to establish the relevant conditions for effective intermediation including relevant knowledge about and relationships within the organizations (Decreton, Monteiro, Frangos, & Friedman, 2021; Klueter & Monteiro, 2017; Monteiro & Birkinshaw, 2017). Specifically, the accelerator allows me to gain further insights into how relationships between entrepreneurial support organizations and their sponsor are established and sustained as a novel research area (Bergman & McMullen, 2021). Understanding how organizations establish relevant conditions to bridge or span boundaries between non-affiliated startups and established organizations is relevant for accelerators and

more broadly for external entrepreneurial support organizations working with previously unconnected actors (e.g., incubators, accelerators). Moreover, for corporate internal ECV vehicles that are establishing themselves or aiming to improve operations (e.g., sourcing units, CAs) understanding bridging or boundary spanning conditions is important to build up internal resources, processes, and structures in a way that is conductive to startup sourcing and collaboration.

Second, sourcing attractive startups for multiple corporates at the same time requires the accelerator to establish a matchmaking process that is fit to create bridges and enable mutual curation between potential partners. Such a setting in which multiple organizations on each side of the boundary are external and change is likely to reveal new boundary spanning structures, processes, or mechanisms that are potentially transferrable to other organizations operating between the different worlds. For example, if organizations change the process needs to be flexible enough to accommodate changes in knowledge (Monteiro & Birkinshaw, 2017) and personal relationships (Colman & Rouzies, 2019; Huang, Luo, Liu, & Yang, 2016) as well as social capital (Monteiro & Birkinshaw, 2017) in the organizations. Furthermore, the process needs to be sufficiently standardized across cohorts in terms of matchmaking structures, process steps, and tools (O'Mahony & Bechky, 2008; Perkmann & Schildt, 2015) to manage many different organizations on each side of the boundary. Therefore, I not only observe loose mechanisms but also the formalization of the mechanisms into structures and processes.

Third, observing the matchmaking processes with multiple different organizations in parallel allows me to study several directly comparable process executions as well as the differences between corporate organizations (e.g., conditions for effective matchmaking, sourcing and selection criteria). Overall, the context will likely allow me to enrich our limited understanding of the pre-acceleration sourcing process (compare call for research by Cohen et al., 2019b;

Shankar & Shepherd, 2019) as well as the boundary spanning conditions and mechanisms employed to match corporates and startups.

The purpose of this thesis is to contribute to the research on (corporate) accelerators, ECV, entrepreneurial support organizations, and the general management of organizational boundaries. I do this by exploring how an accelerator initiates collaborations between multiple corporates and startups through its pre-cohort matchmaking process. The processes of how accelerators generally source and select startups with a strategic fit to corporate sponsors (i.e., accelerator selection process) as well as how external organizations create conditions, structures, processes, and mechanisms to span boundaries are two topics that are poorly understood in management research (see Section 2.1 and 2.3). Therefore, I specifically study a platform accelerator's pre-cohort matchmaking process. I focus on how the accelerator establishes conditions and employs structures, processes, and mechanisms to span boundaries separating the asymmetric organizations—namely corporates and startups. This process entails gathering rich and longitudinal data on the accelerator's matchmaking process starting with the first alignments between accelerator and corporate sponsors to the final selection of startups for collaboration projects with a corporate sponsor.

1.2. Research Question

As outlined in the previous section, we know little about how external entrepreneurial support organizations—such as the platform accelerator—initiate collaborations between asymmetric corporates and startups. While we know that entrepreneurial support organizations enact a bridging role, we lack an understanding of how external organizations create the necessary conditions, structures, and processes to facilitate a series of mechanisms that can overcome the hurdles that arise from the direct interaction between two asymmetric organizations.

To address the question of how the platform accelerator bridges boundaries between asymmetric organizations, I conducted an exploratory inductive study (Denzin & Lincoln, 2011; Langley, 1999). This approach allowed me to answer the question of how and why aspects emerge by tracing a process over time and displaying the underlying mechanisms (Langley, Smallman, Tsoukas, & van de Ven, 2013). Additionally, exploring a phenomenon in the natural environment fosters the understanding of antecedents and conditions (Berger & Luckmann, 1966; Denzin & Lincoln, 2011; Morgan, 1983; Schutz, 1972; Weick, 1979).

Following this approach, my thesis provides insights into topics raised by multiple calls for research on (i) pathways for CA design and operations (Shankar & Shepherd, 2019), (ii) a better understanding of the accelerator's sourcing and selection process as well as the influence of corporates' sourcing of external innovation (Cohen et al., 2019b; Shankar & Shepherd, 2019), and (iii) the understanding of relationships between entrepreneurial support organizations and their sponsors (Bergman & McMullen, 2021).

To address these aspects, the following research question was developed for this dissertation: *How does a platform accelerator span organizational boundaries by facilitating matchmaking between multiple corporates and startups before the cohort starts?*

The main research question is subdivided into three sub-questions:

    i.   *How does the platform accelerator as an external entrepreneurial support organization create the necessary conditions to act as a boundary spanner or organization between corporates and startups?*

    ii.   *How does the platform accelerator span boundaries throughout the pre-cohort sourcing and selection process (i.e., matchmaking process[1])?*

    iii.   *Which boundaries and associated hurdles are surpassed by the platform accelerator?*

1.3. Data Set and Methodology

To investigate my research question, I build on the accelerator literature and a boundary spanning perspective to develop a dynamic process model on the platform accelerator's matchmaking between corporates and startups. I followed a qualitative, inductive research design (Denzin & Lincoln, 2011), drawing on an in-depth case study with an established platform accelerator that had been initiating collaborations between startups and corporates for more than 10 cohorts with 4–10 corporate partners and typically 10 startups selected for each cohort. The accelerator operated as a standalone organization—legally and structurally independent from its corporate sponsors. While some corporate sponsors partnered with the accelerator continuously for several years, others terminated the contract after a short period. Throughout its operation, the accelerator worked with 13 different corporate sponsors. The goal of the accelerator program was to initiate collaboration projects between corporate sponsors and startups. Therefore, the program had two components: first, the acceleration program with "mentorship and/or educational components, that culminates in a graduation event" (Cohen et al., 2019b, p. 1784) and second, a time- and budget-bound collaboration

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[1] For general accelerators or other general entrepreneurial support organizations, I use the term *sourcing and selection process* to describe the selection of startups to participate in the program. For CAs, I use the term *matchmaking process* to describe how startups are chosen to match with corporate sponsors' strategic interests.

project with one of the corporate sponsors. To identify suitable startups to participate in the acceleration program and collaborate with corporate sponsors, the accelerator conducted a six-month-long matchmaking process under observation.

Throughout the pre-cohort matchmaking process, I collected longitudinal real-time data. I obtained access to rich observational data from meetings and events, semi-structured interviews with the accelerator employees, and extensive written data sources such as continuous access to the digital startup evaluation tool used by the accelerator and its corporate partners to evaluate the approximately 400 startup applications, as well as internal documents. As the first step of the data analysis, I created a comprehensive visual map of the process steps, timelines, and events. The map was an intermediary step between raw data and the model. I engaged in a coding process based on recommendations from Cobin and Strauss (1990) and Gioia et al. (2013). Initially, I identified first-order codes related to the role of an accelerator as an intermediary between asymmetric participant organizations. To aggregate into theoretically explanatory second-order codes, I iterated between the data and relevant literature on accelerators, boundary spanning, and boundary organizations (Aldrich & Herker, 1977; Bergman & McMullen, 2021; Cohen et al., 2019b; Monteiro & Birkinshaw, 2017; O'Mahony & Bechky, 2008), triangulating data sources and re-categorizing codes as understanding advanced. Iteratively aggregating the second-order themes, I captured the aggregate dimensions and described the conditions the accelerator created before the start of the matchmaking process as well as the mechanisms it employed during the matchmaking process to identify and realize matches. Finally, I integrated identified second-order themes and aggregate dimensions into a process model.

The model describes how the accelerator employed the different boundary spanning mechanisms to support the identification and realization of matches between the asymmetric organizations (i.e., *anticipating asymmetries between corporates and startups, structuring*

matching, fostering realization, formalizing collaboration project) spanning multiple *boundaries and associated hurdles*. Additionally, it shows how the accelerator (re-)created the conditions for the matchmaking process (i.e., *establishing as boundary organization, repositioning for next matchmaking process*). Chapter 3 discusses the research setting and methodology in more detail.

1.4. Thesis Structure

This thesis is separated into six chapters. Following the introduction, Chapter 2 covers the theoretical background of the study and introduces the literature on accelerator programs and other, related early-stage ECV vehicles as well as literature on boundary spanning and boundary organizations.

Chapter 3 describes the research methodology I used in this study. This description includes a discussion of the research strategy I employed (Section 3.1) and the exploratory case study design I used (Section 3.2). Furthermore, I provide details about my data sources and data collection (Section 3.4) as well as my approach to coding and data analysis (Section 3.5).

Next, I present my research findings. Section 4.1 illustrates the organizational boundaries the accelerator spanned throughout the matchmaking process. Section 4.2 describes how the accelerator creates the conditions for boundary spanning by establishing itself as a boundary organization between corporates and startups. Section 4.7 elaborates on the mechanisms contributing to the accelerator's re-positioning as a boundary organization throughout each matchmaking round. Section 4.3 and 4.6 describe the scaffoldings the accelerator created to systematically conduct the matchmaking process and support the execution of collaboration projects, and Section 4.4 and 4.5 describe the boundary spanning mechanisms employed throughout the matchmaking process under observation. Finally, Section 4.8 describes a dynamic model that illustrates my theory about the accelerators' boundary spanning structures,

processes, and mechanisms as well as the conditions (re-)created to successfully span different external and internal organizational boundaries.

Finally, Section 5.1 summarizes my contributions to the literature on accelerators, (external) corporate venturing, entrepreneurial support organizations, and bridging boundaries (i.e., boundary organization and boundary spanning literature). Section 5.3 outlines the implications of my findings for practice. Finally, Section 5.3 outlines the limitations of this thesis and suggests directions for future research.

2. Theoretical Background

This chapter summarizes the relevant literature to ground the empirical study. Section 2.1 summarizes previous work on accelerators in general as well as on corporate operated and sponsored accelerators. This overview offers an understanding of how accelerators act as a bridge or as boundary spanning organizations between corporates and startups. Section 2.2 presents the literature on corporate sponsored ECV vehicles to understand if they fulfill a similar boundary-spanning role. Finally, Section 2.3 offers a review of the literature on boundary spanning and boundary organizations as a theoretical lens to study how accelerators connect asymmetric organizations (i.e., corporate sponsors and startups).

2.1. Accelerator Programs

Accelerators[2] emerged with the establishment of the Y-Combinator in 2005 and proved to be a rapidly growing phenomenon (Bergman & McMullen, 2021; Cohen et al., 2019b). General accelerators are "fixed-term, cohort-based program[s] for startups, including mentorship and/or

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[2] While literature sometimes describes accelerators as new form of incubators, in this thesis I distinguish the two vehicles. Accelerators differ in their program design from incubators that support ventures in conserving scarce resources (e.g., physical infrastructure and administrative services). In contrast an accelerator's program components for example enable entrepreneurial learning (e.g., mentorship, educational components) and the program follows a fixed-term, cohort based structure (e.g., cohort of ventures that start and end together).

educational components, that culminate[s] in a graduation event" (Cohen et al., 2019b, p. 1784), and they are intended to catalyze startup development (Chan et al., 2020; Cohen et al., 2019b). Previous research has focused on the design of accelerator programs (Cohen et al., 2019b; Shankar & Shepherd, 2019) and its impact on participant-startup outcomes such as growth, funding, or technology and market validation (Chan et al., 2020; Cohen et al., 2019b; Cohen et al., 2019a; Gonzalez-Uribe & Leatherbee, 2018; Hallen et al., 2020; Yu, 2020).

Accelerator programs strongly vary in their design with the following design elements: cohort size and composition (i.e., generic programs versus those that focus on industry, startup development stage, or a founder population), program duration, funding provided, equity taken, mentorship (i.e., internal versus external mentors), formal education or training program, workspace, administrative support, and the graduation event (Cohen et al., 2019b). The founding managing directors and accelerator sponsors are two crucial determinants of the program design. First, the managing directors' education and experiences—including their corporate, entrepreneurial, or investor experience—have an imprinting effect on the program through their network of mentors or their capability to advise startups (Cohen et al., 2019b). Second, sponsors are not only critical for the financial viability of the accelerator, but they also have an imprinting effect on the accelerator's goal and respective design choices (Cohen et al., 2019b; Shankar & Shepherd, 2019). Design choices concern the accelerator's sourcing process of participating startups as well as the design of the accelerator's services including mentorship and education, the startup investment strategy, and the resource network (Chan et al., 2020; Cohen et al., 2019b).

Corporates, investors, universities, governments, entrepreneurs, and non-for-profit foundations can sponsor accelerator programs (Cohen et al., 2019b; Pauwels, Clarysse, Wright, & van Hove, 2016). Accelerators can also have more than one sponsor and sponsor type (e.g., corporate and government sponsors; Cohen et al., 2019b). For example, investors such as

venture capital (VC) funds or angel groups are incentivized by the improved conditions or lower costs of startup access to sponsor programs. Therefore, investor-sponsored programs are characterized by the startup-potential oriented selection, strong education, and mentorship components, as well as by the design of the demo day (Cohen et al., 2019b). University-sponsored programs often focus on the diffusion of technologies and the development of their students' entrepreneurial skills, which implies that accelerators focus on program elements enabling technology transfer and fostering education (Cohen et al., 2019b). Moreover, the composition of the startup cohort varies in terms of a focus on specific industry verticals or technologies (Cohen et al., 2019a) and reflects the sponsor's orientation. Hence, sponsorship and respective dependence is the main factor differentiating accelerator types in literature. Literature discusses mainly independent accelerators and CAs (e.g., Jackson & Richter, 2017; Shankar & Shepherd, 2019), but also mentions university accelerators and government accelerators (Cohen et al., 2019b; Hallen et al., 2020).

Table 1: Accelerator Design Elements Following Cohen et al. (2019b)

Design Element	Description
Founding managing director (MD)	- 1–3 MDs - MDs with diverse educational backgrounds and professional experiences - MDs have an imprinting effect on program design and success
Sponsor	One or multiple sponsors of accelerator programs - Sponsors "provide financial or in-kind support, including office space, professional services, mentors, and endorsement, to accelerator programs" (Cohen et al., 2019b, p. 1787) - Sponsors have an imprinting effect, especially on program goals
Cohorts	- Startups are grouped into a cohort to organize and attract other key resources and increase incentives for stakeholders' participation (e.g., mentors meeting with multiple startups) - Cohort design choices include size, human capital characteristics, industry diversity, and stage of startup development
Funding and equity	- Comparably small funding amounts to allow startup development during the program - Equity taken (0%–15%) in return for funding impacts the applicant startup pool as well as the accelerator strategy for long-term survival
Mentorship	- Mentorship is a provision of technical and business feedback, advice, and social support - Mentorship is provided by internal personnel and/or external mentors (e.g., alumni, entrepreneurs, investors, lawyers)

	-	Variation exists in terms of how many mentors are involved, the matching process between mentors and startups, and the intensity of the interaction with mentors
Formal education	-	Shared program of formal education or tailored educational program per startup
Workspace	-	Provision of group workspaces by major share of the programs
Length of program and graduation	- -	Fixed-time programs with varying lengths of 4–52 weeks Graduation event at the end of the program

The impact or treatment effect of accelerators on participant startups is comprehensively analyzed in the literature and is mainly described as positive (see Table 2). The literature indicates positive effects on the participating startups' key outcomes as well as their speed of achieving these outcomes (Hallen et al., 2020). First, accelerator participation is shown to positively impact startup scale measured by employee growth (Chan et al., 2020; Gonzalez-Uribe & Leatherbee, 2018; Hallen et al., 2020). Second, while the results are mixed, several studies indicate an increase in the probability of acquiring additional funding or the funding amount raised from investors throughout or after the acceleration process (Gonzalez-Uribe & Leatherbee, 2018; Hallen et al., 2020); however, Woolley and MacGregor (2021) do not find an effect on VC funding. Additionally, quality-relaying signaling leads to the acquisition of higher-status investors by participant startups than they would likely have obtained otherwise, whereas the direction and strength of the effect vary by accelerator (Hallen, Cohen, & Park, 2023). Third, studies have identified a positive effect on the startups' customer traction measured by web traffic as well as by revenues across countries (Chan et al., 2020; Hallen et al., 2020) and have emphasized a positive revenue effect for high-potential startups operating in developing economies (González-Uribe & Reyes, 2021). Finally, participant startups face a lower likelihood of negative closure (Woolley & MacGregor, 2021). Although one study by Yu (2020) revealed contradictory effects indicating that accelerated startups close earlier based on the feedback provided by the accelerator and that they have a lower average funding ratio

conditional on startup closing, the majority of the studies show that startups benefit from accelerator participation.

However, accelerators need to be selected consciously since the strength of the impact depends on the particular accelerator, its design, and the breadth of services provided (Chan et al., 2020; Hallen et al., 2023; Woolley & MacGregor, 2021). The positive impact is explained by a sorting effect induced by the accelerators' elaborated sourcing and selection process, the accelerator participants' increased efforts invested into the startup, and treatment effects (Hallen et al., 2020). Exemplarily, treatment effects comprise entrepreneurial learning induced by the training, mentoring, and educational services of accelerators (González-Uribe & Reyes, 2021; Hallen et al., 2020). Hallen et al. (2020) describe a particular process through which accelerators support startup learning in a manner that is characterized by broad, intensive, and paced consultations with many others outside of the startup. Table 2 provides an overview of the literature on general accelerators.

Table 2: Overview of General Accelerator Literature

Exemplary Studies	Category	Method	Main Findings
Cohen et al. (2019b)	Design/concept	Mixed	Accelerator design elements: program design (including cohorts, funding, equity, mentorship, formal education, workspace, length of program, and graduation event), founding stakeholders (including founding MDs and sponsors), and objectives
			Impact of accelerator design elements on participant startups:
			- Relationship between founding MDs' professional experience, choice of founding sponsor organizations, and design of accelerator optimized to meet founders' objectives
			- Differently designed accelerators have varying impacts on participant startup performance:
			investor-led accelerators positively impact the capital startups raise post-graduation; government-sponsored programs negatively impact sums of capital raised; corporate-sponsored programs positively impact valuations
			longer program duration is associated with higher performance for alumni startups

Cohen et al. (2019a)	Mechanisms	Qualitative	Accelerators mitigate bounded rationality in new ventures (especially, pre-mature satisficing), including:
			- Incomplete information: forces consideration of more alternatives for each problem
			- Satisficing: forces search along satisfied dimensions
			- Cognitive bias: overcome overconfidence concerning self-assessment
			Accelerators face three design choices, with different impacts on the startup's ability to overcome bounded rationality:
			- Space or concentrate mentor/customer consultations: concentration is more effective
			- Foster privacy or transparency between startups: transparency is more effective
			- Tailor or standardize the program: standardization is more effective
Krishnan et al. (2021)	Mechanisms	Qualitative	Accelerators are a platform for generalized exchange (i.e., recurrent pattern of exchange) between participant startups, and they foster or hinder such exchange:
			- Accelerator exchange expectations shown in interaction rituals are key to shaping peer relationships and explaining the emergence or non-emergence of generalized exchanges
			- Bonding rituals that foster fellowship feelings versus tournament rituals that destroy trust
			- Answered/unanswered resource seeking and giving is contributed to dynamics that trigger a virtuous or vicious cycle
Assenova (2021)	Moderators	Quantitative	Policy and regulatory reforms that reduce the time and procedures to start new firms (e.g., obtain credit and resolve bankruptcy) impact early-stage startup selection in accelerator:
			- Improve perceived benefits of accelerator for networking and skills development by startups
			- Increase the number and heterogeneity of new applicants to venture accelerators
Hallen et al. (2020)	Mechanisms/ outcomes	Mixed	Accelerator participation increases the likelihood (e.g., funding, web traffic, and employees) and speed of achieving key outcomes (e.g., fundraising):
			Mechanisms driving accelerators' impact:
			- Sorting effect: accelerators complement founders' pre-entry experience
			- Learning: learning driven by broad, intensive, and paced consultations with many others outside of the startup
			- Accelerator participants' increased effort (e.g., quitting outside jobs)
González-Uribe and Reyes (2021)	Mechanisms/ outcomes	Quantitative	Firm capabilities' constraints hinder the ability of high-potential entrepreneurs in developing economies:
			Accelerators add value in developing countries by identifying and boosting top growers:
			- Participation in accelerators with grouped training and customized advice and visibility alleviates capability

			constraints and unlocks entrepreneurs' potential, leading to an increase in revenue
			- No improvement effect of low-potential participants who were mistakenly accepted by generous judges
Chan et al. (2020)	Outcomes	Quantitative	Accelerators' differences in design (e.g., strategic mission, emphasis on the startup development stage, types of owners, emphasis on technology stage, type of technology, and geography) drive impact on startup economic performance:
			- Accelerator participation accounts for 11.13%—14.18% variance of venture performance
			- Accelerator participation accounts for 3.00%, 5.15%, and 16.65% in the variance for employee growth, employee costs, and revenue change, respectively
Woolley and MacGregor (2021)	Outcomes	Quantitative	Accelerator participation has a positive effect on startups' negative closure:
			- Likelihood of negative closure is reduced (no effect on obtaining VC funding and government grants)
			- Amount of services and resources offered is moderator—more services reduce the likelihood of closure and increase the likelihood of obtaining government grants
Gonzalez-Uribe and Leatherbee (2018)	Outcomes	Quantitative	Accelerators' entrepreneurial schooling help startups:
			- Probability of securing additional financing increases by 21.0%
			- Amount of capital raised increases threefold
			- Venture scale measured by the number of employees increases
Hallen et al. (2023)	Outcomes	Quantitative	Accelerator participation is associated with startups obtaining higher-status investors:
			- Heterogeneity of effect is high across accelerators
			- Effect is partially driven by quality-relaying signaling
Yu (2020)	Outcomes	Quantitative	Accelerator startups are less likely to reach key outcomes:
			- Close earlier and at a higher rate, suggesting that accelerator feedback helps resolve uncertainty about company quality
			- Conditional on closing the average funding ratio is lower
			Accelerated companies receive more efficient investments compared to non-accelerated ones

2.1.1 Corporate (sponsored) Accelerators: A Literature Review

Since this dissertation focuses on an accelerator closely linked to corporates, this section provides a more detailed review of the respective literature. The literature defines corporate acceleration as "a corporation's capability to catalyze a venture's access to customers, investors, technologies, social networks, and mentors in a shorter period so as to change either its rate of scale or its strategic direction" (Shankar & Shepherd, 2019, p. 12). Compared to the

literature on general accelerators, the literature on CAs is even more nascent, focusing on understanding corporate motives for accelerator sponsorship as well as the conceptualization of CAs. Whereas the two accelerator types are comparable in their design, sponsorship has a strong impact on accelerator goals and design and potentially on startups, outcomes for the accelerator itself, and the sponsoring organization as an additional stakeholder (e.g., Cohen et al., 2019b; Shankar & Shepherd, 2019). Past research has found that corporates are the most common sponsors providing financial or in-kind support; for example, a study by (Cohen et al., 2019b) found that 62% of accelerators in their sample had direct sponsorship from corporates. When engaging in corporate acceleration, corporates need to decide whether to outsource the accelerator activity to an external partner in exchange for mainly financial or in-kind support or to build the accelerator program internally (Cohen et al., 2019b; Urbaniec & Żur, 2020).

To understand the state of literature on CAs, I conducted a systematic literature review (for methodology see Appendix A1 and A2). My review includes literature on independent accelerators with corporate sponsorship and corporate internal accelerators referring to those accelerator programs as CAs. In the sample, 12 studies focus on accelerator programs that are either sponsored, founded, and/or operated by corporates. I clustered the studies based on the motivations for establishing CAs, CA typologies, challenges of and success factors for CAs, and impact on sponsoring corporates and participating startups.

Antecedents: Corporate motives for CA establishment or sponsorship. With accelerator and especially CA research being in a nascent stage, the conceptualization of the phenomenon and the understanding of the corporate motives behind operating an internal accelerator or using the services of an external accelerator play an important role. The motive is commonly discussed as a sub-topic in several papers that focus on creating CA typologies.

Corporate motives are attributable to two categories: strategic and financial. Strategic motives encompass the monitoring of startup innovations in relevant industries or markets to mitigate competitive risk (Kanbach & Stubner, 2016; Urbaniec & Żur, 2020), the identification of innovations to be integrated into corporate functional units at any point of the value chain (Kanbach & Stubner, 2016; Nesner, Eismann, & Voigt, 2020; Shankar & Shepherd, 2019; Urbaniec & Żur, 2020), the rejuvenation of corporate culture (Hutter, Gfrerer, & Lindner, 2021; Kohler, 2016; Nesner et al., 2020), or the attraction and retainment of entrepreneurial talent (Kohler, 2016). Financial motives are linked to supporting promising high-growth startups to gain financial returns from acquired equity stakes (Shankar & Shepherd, 2019). Looking deeper into the relationship between accelerator motives and typologies, Urbaniec and Żur (2020) show that motives emerge from pull and push factors within and outside an organization (e.g., external push factors: industry disruptions; internal push factors: endangered market position; external pull factors: market and demand transition; internal pull factors: new knowledge and inspiration for employees). The different motives spawn different accelerator types: exploratory accelerators monitoring innovation trends tend to be dominated by external pull motives and exploitative accelerators providing startup solutions for particular business lines are influenced by internal push motives (Urbaniec & Żur, 2020).

Concept: CA design elements and typologies.

Table 3: Overview of CA Typologies

Dimension	Studies	Typologies
Corporate's strategic motive	Urbaniec and Żur (2020)	Explorative accelerator, exploitative accelerator
	Kanbach and Stubner (2016)	Listening post, value chain investor, test laboratory, unicorn hunter
	Shankar and Shepherd (2019)	Venture emergence accelerator, strategic fit accelerator
	Nesner et al. (2020)	Market-driven accelerator, culture-driven accelerator, investment-driven accelerator
	Pauwels et al. (2016)	Ecosystem building, deal-flow maker, welfare simulator

# of corporates involved, corporate internal versus independent accelerator management	Moschner et al. (2019)	In-house accelerator, hybrid accelerator, powered by accelerator, consortium accelerator

The subset describes the CA phenomenon and provides typologies. Corporates are likely to affect the accelerator's sourcing and selection process (referred to as the "matchmaking process" in this thesis) or to modify the program design by providing the participating startups with access to strategic resources—time of corporate executives, financing, and pilot contract opportunities (Cohen et al., 2019b). Moreover, the composition of the cohort in terms of a focus on specific industry verticals or technologies varies (Cohen et al., 2019a) and reflects the sponsor's orientation. Therefore, while general accelerators are characterized in literature (Cohen et al., 2019b), a new stream of literature has started carving out the distinct characteristics of CA programs.

Design elements that distinguish CAs from general accelerators are the corporate's strategic goal, the link to the corporate organization including access to corporate resources and customers, and the involvement of the corporate management and functional units (Cohen et al., 2019b; Richter, Jackson, & Schildhauer, 2018; Shankar & Shepherd, 2019). The typologies classifying CAs (see Table 3) mostly build on the corporate's motive or strategic objective for establishing an accelerator and further distinguish the configuration of common accelerator design elements: for example, equity taken, offerings (including workspace, external mentorship, and formal education), location, participating corporates, management, and operational structure (Cohen et al., 2019b; Kohler, 2016; Moschner et al., 2019).

Table 3 summarizes the various typologies developed in the literature. Two recurring typologies distinguish CAs following the strategic or financial motive of the corporate

sponsor(s) or parent. Corporates' different strategic motivations are in turn linked to four different strategic CA types described in the literature. First, a commonly described motive is the monitoring of startup innovations in relevant industries or markets (e.g., explorative accelerators) according to Urbaniec and Żur (2020), market driven accelerators according to Nesner et al. (2020), or listening post according to (Kanbach & Stubner, 2016)). Second, corporate culture driven accelerators aim to introduce new working methods and promote a more risk-taking and entrepreneurial work culture in incumbent organizations (Nesner et al., 2020). Third, ecosystem builder CAs are designed by corporates to match their lead customers with startups to build an ecosystem around their company (Pauwels et al., 2016). Finally, a commonly identified strategic CA type focuses on the selection of startups with a strategic fit to one of the corporate parent's business units and aims for subsequent integration of the startup technology into the corporate organization (Kanbach & Stubner, 2016; Shankar & Shepherd, 2019; Urbaniec & Żur, 2020). An example of the last CA type is Shankar and Shepherd's (2019) strategic fit accelerator. Organizationally and operationally this CA type has a close link to the corporate parent (Kanbach & Stubner, 2016; Shankar & Shepherd, 2019). Throughout the selection process, a corporate internal jury tries to identify startups with a good strategic fit for particular business units (Shankar & Shepherd, 2019). When accelerating the strategic fit, the CA offers startups access to the corporate as a customer, catalyzes tests of ventures' innovations within the organizational environment, involves corporate leaders as mentors, and focuses the demo day on the results of the corporate collaboration project (Shankar & Shepherd, 2019).

In contrast, financially oriented CAs, such as the venture emergence accelerators, try to gain early access to disruptive startups, accelerate them, and monetize acquired equity (Shankar & Shepherd, 2019). These CAs are typically operated as separate legal entities rather distant from corporate operative functional units (Kanbach & Stubner, 2016; Shankar & Shepherd,

2019). The selection process is focused on identifying startups with substantial growth potential involving an external jury (Shankar & Shepherd, 2019). Throughout the acceleration process, startups are provided with access to entrepreneurs as mentors as well as corporate customers and investors to accelerate their development (Shankar & Shepherd, 2019).

A deviating typology building on the operationalization of CAs was developed by Moschner et al. (2019). This classification categorizes accelerators according to the number of participating corporates and a corporate-internal structure compared to an independent management structure. The in-house and the hybrid accelerator are both internal accelerators managed by one corporate but are distinct in that the hybrid accelerator works with corporate internal innovation projects in addition to external startups. The powered by accelerator as well as the consortium accelerator are both operated by independent entities. While the powered by accelerator is a white label accelerator for a single corporate, the consortium accelerator supports multiple corporates in identifying and accelerating suitable startups (Moschner et al., 2019).

CA selection, acceleration, and corporate integration. The CA acceleration process comprises multiple steps including sourcing and selection[3] (i.e., the matchmaking process), acceleration, and post-acceleration. This process is described as part of multiple studies elaborating on process conceptualization or success factors, and it emphasizes the process modifications dependent on the CA type or strategic goal (Shankar & Shepherd, 2019).

The selection of suitable startups is essential for accelerator success in general (Hallen et al., 2020). It becomes even more critical if accelerators fulfill a bridging role and need to scout and

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[3] While all accelerators employ a startup sourcing and selection process to identify suitable startups for the upcoming cohort (Cohen, Fehder, Hochberg, & Murray, 2019b; Hallen, Cohen, & Bingham, 2020), for CAs it is essential to identify whether the startup matches the corporate strategic goals, industry etc. (Shankar & Shepherd, 2019). Therefore I use the word matchmaking process to describe the process of sourcing and selecting startups applied by CAs.

select startups that are a good match for one or multiple corporate sponsors. Similar to general accelerators, CAs typically employ a stage-gated startup matchmaking process, picking the most suitable startups only for their cohorts (Hallen et al., 2020; Shankar & Shepherd, 2019). However, they also adjust the process to the corporate sponsors' needs and strategies (Shankar & Shepherd, 2019). The process starts with intense scouting efforts, which include program broadcasting, leveraging network access, and approaching high-potential startups (Shankar & Shepherd, 2019). The next steps comprise criteria-based screening of startup applications, multi-stage interactions between startups and the jury, and the final selection by a jury (Shankar & Shepherd, 2019). The acceleration process is about providing the participant startups with access to education, training, and mentoring to speed up startup success or failure. The main differences from the general acceleration process are, first, the focus on corporate resource provision to startups and, second, the involvement of corporate employees in the acceleration process (Richter et al., 2018; Shankar & Shepherd, 2019). The depth of integration into the corporate organization differs by type of CA and, therefore, by the involvement of corporate employees. For example, startups can obtain access to senior executives as mentors, work with business units in use case tests or collaboration projects, or even co-locate and systematically exchange with corporate employees (Hutter et al., 2021; Moschner et al., 2019; Shankar & Shepherd, 2019). As for general accelerators, the program ends with a demo day as a graduation event. Startups pitch their business to investors or demonstrate their collaboration progress jointly with corporate mentors (Richter et al., 2018; Shankar & Shepherd, 2019).

Factors for CA success. The third subset of studies investigates challenges to the performance and survival of CAs and respectively success factors for CAs. While qualitative studies list many factors for general accelerator success, I focus on outlining challenges and success factors that are specifically relevant for CAs.

The studies by Hutter et al. (2021) and Urbaniec and Żur (2020) identify challenges on the corporate- and startup-side that impede the performance of CAs along the acceleration process steps. On the corporate side, the lack of management-level support as well as a risk-averse mindset contributes to the failure of accelerators (Hutter et al., 2021; Urbaniec & Żur, 2020). In the preparation phase for the accelerator's establishment, missing strategic alignment and assignment of skilled personnel (including startup selection skills) have shown to be a challenge (Hutter et al., 2021; Urbaniec & Żur, 2020). Additionally, the limited perception among corporate employees negatively impacts the establishment of accelerator programs (Urbaniec & Żur, 2020). Throughout the acceleration phase, a lack of innovation culture as well as the corporates' suboptimal operational setup can cause challenges (Hutter et al., 2021). A suboptimal operational structure commonly leads to slow communication and decision speed and limited financial and human resources (Hutter et al., 2021). Finally, a missing alignment on goals, limited resources, and limited management attention hamper the transfer of the startup innovations as well as the aspired organizational learning process in the corporate organization (Hutter et al., 2021). On the startup side, a business model logic deviating from a corporate's profit orientation (especially one that is for the short-term), paired with a limited understanding of the corporate business model logic lead to challenges when interacting with corporates (Urbaniec & Żur, 2020).

Success factors partially build on the identified challenges, and the literature describes these along the core design elements of CAs. First, a critical success factor is the development of a compelling value proposition for the startups, which is aligned with the corporate parent's strategic motive (Kohler, 2016; Mahmoud-Jouini, Duvert, & Esquirol, 2018; Richter et al., 2018). For example, Mahmoud-Jouini et al. (2018) suggest designing a value proposition that is based on the corporate's core assets to attract startups with goals that converge with the goals of the corporate parent. Second, the literature discusses success factors for optimal accelerator

program design and execution. The literature suggests that the key success factors are the involvement of mentors from inside and outside the corporate organization throughout the acceleration program (Richter et al., 2018), accelerated corporate decision-making (Mahmoud-Jouini et al., 2018), process transparency (Mahmoud-Jouini et al., 2018), and treatment of startups as partners instead of subcontractors (Richter et al., 2018). Third, the CA's organizational structure is important. For example, recommendations have been made to establish the CA's organization as a standalone entity separated from the parent corporate (Richter et al., 2018), to install processes to manage the corporate-startup relations (e.g., contacts to mediate between the asymmetric parties; Mahmoud-Jouini et al., 2018), and to ensure active senior management involvement (Richter et al., 2018). Environmental factors or antecedents can support CA success and the subsequent integration of startups into the organization. Such factors include a positive and supportive corporate culture as well as a high absorptive capacity of the organization (Richter et al., 2018).

Outcomes: CA impact on corporates and startups. The research on accelerator programs' impact on either corporate or startup (innovation) performance or the accomplishment of strategic goals is still limited. While we have first insights into the impact of general accelerator programs on startup outcomes such as growth, funding, speed of technology, and market validation (Chan et al., 2020; Cohen et al., 2019b; Cohen et al., 2019a; Gonzalez-Uribe & Leatherbee, 2018; Hallen et al., 2020; Yu, 2020), only a few studies in my sample address the treatment effects of CAs. In a qualitative case study, Urbaniec and Żur (2020) identify multiple short- and long-term benefits for corporates. In the short term, corporates gain new market knowledge about trends, new technologies, competition, and customer expectations. Long-term strategic benefits encompass learning effects in the employee base (e.g., new competencies), organizational learning effects, network effects, and image improvement (Urbaniec & Żur, 2020). For graduate startups, corporate sponsored programs impact the

valuation positively but do not increase the funding amount compared to the mean performance of all, also non-accelerated startups (Cohen et al., 2019b).

2.1.2 Accelerators as Links Between Corporates and Startups

While the literature discusses the role of the general accelerator as a support organization for startups' entrepreneurial activities more broadly, it also recognizes that CAs operate as intermediaries. These CAs intermediate between sponsoring corporates that are striving to learn about new technologies and markets (Cohen et al., 2019b; Hochberg, 2016), to monitor developments in the environment (Weiblen & Chesbrough, 2015), or to innovate (Richter et al., 2018) and young and small startups aiming to gain corporates as potential customers or acquirers and/or for their resources (e.g., customers, investors, technologies, or social networks; Shankar & Shepherd, 2019). Following the definition of corporate acceleration as "catalyz[ation of] a venture's access to customers, investors, technologies, social networks, and mentors" (Shankar & Shepherd, 2019, p. 12), the configuration of accelerator design elements impacts exchange between startups and corporate employees across hierarchical levels. Exchange is fostered along all stages of the acceleration process, for example by inviting corporate executives to the accelerator jury, involving corporate executives and unit heads in mentoring activities, or identifying business units to accompany use case tests and collaboration projects (Cohen et al., 2019b; Shankar & Shepherd, 2019). To secure the smooth exchange between the different organizations, CAs also install specific control or mitigation activities. Such activities include periodic meetings with startups to discuss their business unit interaction or the involvement of executives as lobbyists for the startups (Shankar & Shepherd, 2019). Therefore, the main purpose of these CAs is to connect startups with the sponsoring corporate(s).

The above explanation is in line with the broader literature on entrepreneurial support organizations, which investigates how the organizations establish connections during the programs and highlights their bridging and curating functions between participating startups and other firms or resource providers (Amezcua et al., 2020; Bergman & McMullen, 2021; Woolley & MacGregor, 2021). Bridging refers to the entrepreneurial support organizations' effort to connect a startup to general or industry-specific resources in the environment to increase the startup's resource endowment, social capital, or legitimacy (Amezcua et al., 2013; Amezcua et al., 2020). Curating adds the element of selection by directing the startup towards the best available or matched resource provider (Amezcua et al., 2013; Amezcua et al., 2020), and this mechanism is likely supported through a CA matchmaking process between startups and corporate industries, strategic or financial priorities, or use cases within business units (Cohen et al., 2019b; Shankar & Shepherd, 2019). However, it remains unclear through which mechanisms accelerators enact this bridging and/or curating role.

While corporate-run accelerators focus on establishing connections between startups and one parent corporate (Shankar & Shepherd, 2019), several legally and structurally independent programs (Cohen et al., 2019b) are sponsored by multiple corporates at the same time (e.g., Plug and Play), and therefore, the arrangement functions as a multi-stakeholder platform (Cohen et al., 2019b; Moschner et al., 2019). Sponsorship by multiple, regularly changing corporates is likely to add unique characteristics to the accelerator program since distinct strategic preferences of multiple sponsors need to be reflected in the operational structures, program design, and matchmaking processes. Especially, enacting a bridging role between multiple, non-familiar organizations promises to impose complexity. Examples of program design elements that are specific for this accelerator type are dedicated events and workshops with corporate sponsors, enabling startup access to more diverse resources and networks, as well as networking opportunities between corporates (Plug and Play, 2022). Moreover, the

accelerators' organizational structures need to be adjusted to service regularly changing corporates across different technology verticals and locations (e.g., standardization of structures and processes; Plug and Play, 2022). Therefore, I distinguish these accelerators from other accelerator types and follow the self-description of one major representative as "the largest innovation platform in the world" (Plug and Play, 2022), referring to the particular type as a platform accelerator.[4] I define platform accelerators as *fixed-term, cohort-based programs that focus on the establishment of connections between multiple sponsoring corporates and startups curated to the corporate's areas of interest with the goals to enable the validation and development of the startups' solutions and both actors' assessment of future collaboration opportunities throughout the program.*

2.2. External Corporate Venturing to Collaborate With Early-stage Startups: A Literature Review

From the perspective of the sponsoring corporates, CAs are one particular vehicle to conduct ECV and cooperate with startups in an early stage of venture development. To lay the theoretical basis for answering my research question on platform accelerators' matchmaking role, I aim to understand the literature on ECV vehicles that first, enable corporate-startup collaboration and, second, are similar to CA programs. This is particularly relevant since we understand that some ECV vehicles fulfill a bridging role between startups and other resource providers (Amezcua et al., 2013; Amezcua et al., 2020). Classical ECV vehicles are licensing, joint venturing, CVC, and acquisition (Narayanan et al., 2009). To engage with innovation

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[4] Moschner, Fink, Kurpjuweit, Wagner, & Herstatt (2019) introduced CAs with multiple participating corporates as "consortium accelerators". While, I refer to a similar phenomenon, the term "consortium" implies two aspects incoherent with my observations of the phenomenon: (i) the accelerator is a corporate-driven endeavor and (ii) focuses on particular projects. I observed mainly external entities operating accelerators sponsored by multiple corporates (e.g., Plug and Play). Additionally, rather the accelerators in focus perceive themselves as basis for an ongoing interaction between corporates with startups and the broader startup ecosystem as well as corporates among each other ("We drive innovation by connecting entrepreneurs, corporations, and investors worldwide"; Plug and Play, 2022). Therefore, I deviate from the term consortium.

project teams or startups in an early stage, corporates have more recently utilized vehicles such as startup programs (including hackathons), coworking (CWS) and maker spaces, CIs, strategic alliances,[5] and accelerators (Bergman & McMullen, 2021; Enkel & Sagmeister, 2020).

To identify vehicles that are similar to CA programs, I first focused on the stage of the startups the organization engages with and/or supports (see Table 4). The selected accelerators focus on early startups in the stage of infancy and early growth (Bergman & McMullen, 2021), hence vehicles targeting later-stage startups such as licensing, joint venturing, CVC, and acquisition were excluded from the review. The remaining vehicles are startup programs (including hackathons), CWS and maker spaces, CIs, and strategic alliances. Furthermore, in alignment with the definition of accelerators as "fixed-term, cohort-based program[s] for startups," I focus on more formalized vehicles including hackathons, CWS, and CIs, excluding strategic alliances as commonly one-time efforts. The next Section 2.2.1 compares ECV to internal corporate venturing and afterwards Section 2.2.2 provides an overview of the reviewed articles. Thereafter, articles about ECV as an overarching concept (Section 2.2.2) and associated vehicles[6] for early-stage cooperation between corporates and innovation project teams or startups along different stages of the entrepreneurial journey (Sections 2.2.4–2.2.7) are described. The review of the literature on the single vehicles is structured according to the maturity or stage of the participating temporary project teams or startups (e.g., hackathons:

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[5] While strategic alliances are non-equity early-stage collaboration vehicles between corporates and startups, I exclude them from this review. Focusing on accelerators as formalized ECV vehicles in context of this thesis, I aim to compare them with other more formalized modes of early-stage corporate-startup engagement, whereas strategic alliances are rather individual efforts/collaborations defined as the firm's active participation in joint projects (Haeussler, Patzelt, & Zahra, 2012).

[6] Bergman & McMullen 2021 classify the vehicles in focus of this work as entrepreneurial support organizations defined as "an organization whose primary purpose is to support individuals and collectives, through (in)direct and (im)material assistance, as they seek to initiate and progress through the stages of the entrepreneurial process." Since I aim to outline which purpose hackathons, CWS, CIs and in particular CAs fulfill as boundary spanning agents between corporates and startups, I deviate from the nomination as entrepreneurial support organizations.

mainly individuals forming temporary teams; CWS: startups and corporate employees at different stages; CI: startups in the pre-venture or infancy phase) as well as to the corporate resource commitment (e.g., hackathons: one-time events with limited investment; CWS: external CWS participation for employees with limited costs, but CWS establishment requires relatively higher, long-term investment; CI: relatively higher, long-term investment).

2.2.1 Internal Versus External Corporate Venturing

Corporate venturing is recognized as one type of corporate entrepreneurship (Figure 1). Corporate entrepreneurship holistically captures the development and implementation of new ideas in organizations (Hornsby, Kuratko, & Zahra, 2002) or "the sum of a company's innovation, strategic renewal and corporate venturing" (Zahra, 1995: 227). Corporate venturing entails the creation of new businesses inside the corporate organization or cooperation with new businesses developed outside the organization (Guth & Ginsberg, 1990; Kuratko, Covin, & Garrett, 2009; Sharma & Chrisman, 1999). Narayanan et al. (2009) define corporate venturing as "the set of organizational systems, processes and practices that focus on creating businesses in existing or new fields, markets or industries—using internal and external means." In the case of internal corporate venturing, the mother corporate creates and owns the new businesses. In contrast, ECV "refers to entrepreneurial activity in which new businesses are created by parties outside the corporate and subsequently invested in (via the assumption of equity positions) or acquired by the corporation" (Kuratko et al., 2009). While Kuratko et al.'s (2009) definition focuses on equity-based ECV modes, Schildt et al.'s (2005) definition encompasses non-equity relationships between corporates and external partners. A total of 26 studies in my sample are concerned with ECV as a general concept or address more than one ECV vehicle.

Corporate
Entrepreneurship

Corporate Venturing	**Strategic Entrepreneurship**
• Internal Corporate Venturing • *External Corporate Venturing* • Cooperative Corporate Venturing	• Strategic renewal • Sustained regeneration • Domain redefinition • Organizational rejuvenation • Business model reconstruction
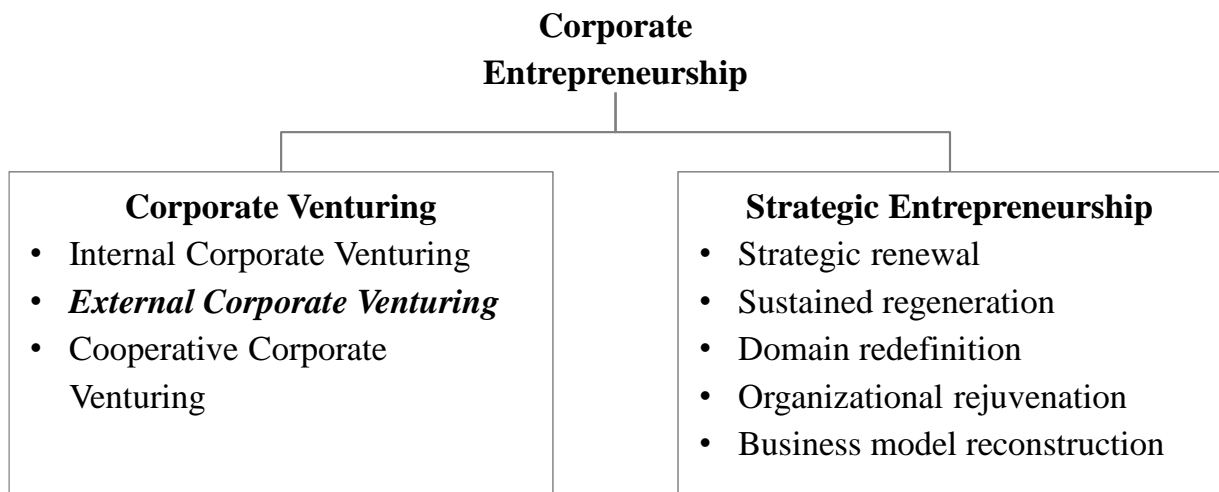
Figure 1: Domains of Corporate Entrepreneurship According to Kuratko and Audretsch (2013)

2.2.2 External Corporate Venturing: A Literature Overview

This section reviews the literature on ECV as a theoretical concept as well as the associated vehicles for early-stage cooperation between corporates and innovation project teams or startups along different stages of the entrepreneurial journey. Table 4 offers an overview of the early-stage collaboration vehicles and includes definitions and their primary features.

Table 4: Overview of ECV Vehicles

ECV Vehicle	Characteristics and State of Research
Hackathons	Definition: - "accelerated innovation processes that bring together individuals to voluntarily develop new products to solve specific and ambitious challenges in an extremely limited and ad hoc time frame (72 hours or, in some cases, less)" (Lifshitz-Assaf, Lebovitz, & Zalmanson, 2021) Role of corporate: - Sponsor or organizer (Ghosh & Wu, 2021; Pe-Than et al., 2019) - Corporate employees as participants (Pe-Than et al., 2022) Stage of entrepreneurs: temporary project teams ("flash teams") partially involving startups, but also the general public and corporate employee teams (Ghosh & Wu, 2021; Pe-Than et al., 2022)
	Characteristics/features: limited timeframe (typically 2–3 days), innovation sprints, mentoring/coaching, award
	Example: HackMIT
CWS	Definition: - "[…] subscription-based workspaces in which individuals and teams from different companies work in a shared, communal space" (Howell, 2022) Role of corporate:

	- Sponsor or owner/operator
	- Corporate employees as tenants (Bouncken, Kraus, & Martínez-Pérez, 2020b; Howell, 2022)
	Stage of entrepreneurs: pre-venture, infancy, early growth (Bergman & McMullen, 2021)
	Characteristics/features: shared space, administrative support, networking, public events (Bergman & McMullen, 2021)
	Examples: Impact Hub, WeWork
CI	Definition:
	- "A business incubator is a facility that provides affordable space, shared office services, and business development assistance in an environment conducive to new venture creation, survival, and early-stage growth" (Allen & McCluskey, 1991)
	- "Any organization that provides access to affordable office space and shared administrative services" (Bøllingtoft & Ulhøi, 2005)
	- "Tools to accelerate the creation of successful entrepreneurial companies" (Bruneel, Ratinho, Clarysse, & Groen, 2012)
	- "A corporate incubator can be characterized as an organizational unit of an established company with the mission to generate knowledge and to transfer that knowledge into existing business units" (Gassmann & Becker, 2006)
	Role of corporate:
	- Sponsor or owner/operator
	- Mentors, experts
	Stage of entrepreneurs: pre-venture, infancy (Bergman & McMullen, 2021)
	Characteristics/features: physical space, administrative support, networking, business development services (Aerts, Matthyssens, & Vandenbempt, 2007; Bergman & McMullen, 2021)
	Examples: Wayra by Telefonica, AstraZeneca Incubator, SAP.iO Venture Studio
CA	Definition:
	- "A fixed-term, cohort-based program for startups, including mentorship and/or educational components, that culminates in a graduation event" (Cohen et al., 2019b)
	- "CAs are 'company-supported programs of limited duration that support cohorts of startups during the new venture process via mentoring, education and company-specific resources" (Kohler, 2016, p. 348)
	- "[…] corporate acceleration as a corporation's capability to catalyze a venture's access to customers, investors, technologies, social networks, and mentors in a shorter period so as to change either its rate of scale or its strategic direction" (Shankar & Shepherd, 2019)
	Role of corporate:
	- Sponsor or owner/operator
	- Mentors, experts (Cohen et al., 2019b)
	Stage of entrepreneurs: infancy, early growth (Bergman & McMullen, 2021)
	Characteristics/features: physical space, administrative support, program (including mentoring, training), investments/capital, graduation event (Bergman & McMullen, 2021; Cohen et al., 2019b)
	Examples: Y Combinator, Plug and Play

Table 5: Characteristics of Sample Articles

ECV Vehicle	Total	Approach				Geography	Content Category
		Concept (including reviews)	Qual	Quant	Mixed		
Total count	**76**	15 (20%)	28 (37%)	23 (30%)	10 (13%)		
ECV	**26 (34%)**	8	6	11	1	Global: 6 North America: 9 Central/South America: 1 Europe: 2 Asia: 3 n/a: 5	Antecedents: 6 (23%) Concept: 10 (38%) Mechanisms: 4 (15%) Outcomes: 6 (23%)
Hackathons	**6 (8%)**	0	3	1	2	North America: 4 Europe: 1 Asia: 1	Antecedents: 0 (0%) Concept: 2 (33%) Mechanisms: 3 (50%) Outcomes: 1 (17%)
CWS	**9 (12%)**	3	3	1	2	Global: 2 North America: 2 Europe: 1 Asia:1 n/a: 3	Antecedents: 2 (22%) Concept: 3 (33%) Mechanisms: 2 (22%) Outcomes: 2 (22%)
CI	**23 (30%)**	3	6	10	4	Global: 7 North America: 3 Europe: 7 Asia: 2 Middle East/Africa: 1 n/a: 3	Antecedents: 0 (0%) Concept: 11 (48%) Mechanisms: 7 (30%) Outcomes: 5 (22%)
CA	**12 (16%)**	1	10	0	1	North America: 1 Europe: 8 Asia: 1 n/a: 2	Antecedents: 0 (0%) Concept: 9 (75%) Mechanisms: 3 (25%) Outcomes: 0 (0%)

Before integrating the reviewed work along the ECV vehicles, I provide a general overview of this body of research investigating how corporates engage with early-stage startups though ECV. Employing a systematic literature review approach to review articles published between

January 1991 and June 2022[7] (see Appendix A1 and A2 for method and criteria), I identified

76 articles on ECV as a theoretical concept as well as the single ECV vehicles. Table 5 offers

a summary of the conceptual and empirical contributions, the geographical distribution of the

literature, and the content categorization (see Appendix A3 for details on reviewed articles).

Moreover, Figure 2 provides a temporal perspective on the development of literature.

Research on ECV started in the 1990s, and the published literature on early-stage vehicles has

increased in the last seven years, with a peak in 2020 with 15 articles. For the early-stage ECV

vehicles covered in this review, I identified a relatively high research output on ECV as a

theoretical concept (26 articles) as well as on incubators (23 articles)—both fields already have

been studied in the 1990s and early 2000s. While CAs spurred research interest in the last six

years (12 articles), research on hackathons (6 articles) as well as CWSs (9 articles) is still in

the early stages. As indicated in Table 5 and Figure 2, research on ECV and incubators is

comparably established and the vehicles are conceptualized (ECV: 8, CI: 3). The studies build

on qualitative (ECV: 6, CI: 6), quantitative (ECV: 11, CI: 10), and mixed methods (ECV: 1,

CI: 4). Since scientific literature on hackathons, CWS, and accelerators only emerged recently,

conceptual (hackathon: 0, CWS: 3, CA: 1) and qualitative (hackathon: 3, CWS: 3, CA: 10)

studies offer the first conceptualizations of the comparably young phenomena, further

quantitative studies are required to validate the concepts and understand the effects of the

phenomena on the involved stakeholders (quantitative: hackathon: 1, CWS: 1, CA: 0; mixed:

hackathon: 2, CWS: 2, CA: 1).

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[7] I employed a systematic literature review following four steps: (i) sample collection and enrichment, (ii) sample screening, (iii) coding and (iv) analysis. To collect the sample in Web of Science I employed keyword combinations on external corporate venturing, hackathons, co-working spaces, incubators and accelerators and filtered by publication titles following the examples of Narayanan, Yang, & Zahra (2009) and Shepherd, Williams, & Patzelt (2015). Criteria to screen and further filter the sample cover the article's ECV relatedness, close corporate involvement with the vehicle, and evident entrepreneur/startup involvement with the vehicle (for details see Appendix A1 and A2)

ECV
Hackathons
CWS
CA
CI
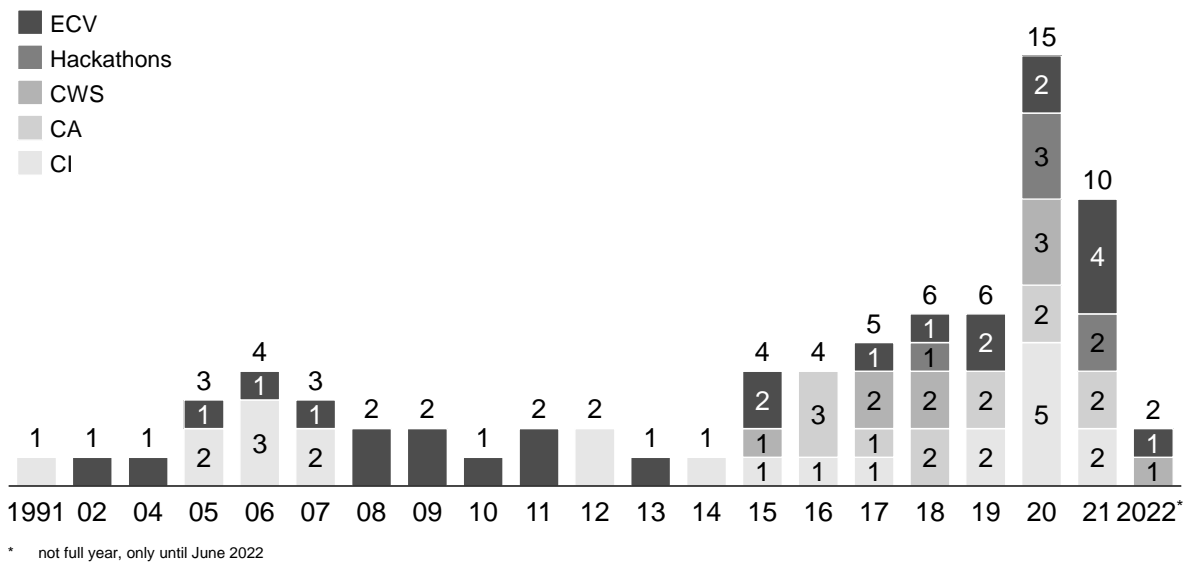
Figure 2: ECV Literature Review Sample Articles by Year of Publication

* not full year, only until June 2022

Concerning the geographical distribution, research on ECV mainly builds on samples gathered in North and Middle America (35% of the ECV articles) as well as globally (23% of the ECV articles), whereas research on the vehicles CI (30% of the CI articles) and CA (67% of the CA articles) centers on a European or—in the case of CI—a globally dispersed sample (30% of the CI articles).

Studies fell primarily into one of four categories: antecedents (8 [11%] articles across vehicles), concept (35 [46%] articles across vehicles), mechanisms (19 [25%] articles across vehicles), and outcomes (14 [18%] articles across vehicles). While especially conceptual studies can often be attributed to more than one category (e.g., they often also discuss antecedents), I tried to distill the primary research goal from the research question and therefore a primary category[8]. Studies on the antecedents describe the environmental or corporate internal drivers or motives for ECV or vehicle establishment or selection. Concept studies provide concept descriptions

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[8] Since one study often address multiple topics (e.g., discussing concepts and antecedents), the number of studies cited in the subsequent textual description (see Sections 2.2.2 – 2.2.6) does not exactly match the numbers (i.e., the primary content category) stated in Table 5 and Appendix A3.

and definitions, give an overview of design elements, and/or develop typologies for ECV or the ECV vehicles. A study primarily discussing the mechanism addresses processes (e.g., CI selection, incubation, integration) or mechanisms (e.g., team interaction dynamics) studied in the context of the respective ECV vehicles. Additionally, I address relevant competencies or factors required to make the ECV endeavor a success. Finally, studies on the outcomes discuss the impact of vehicles' establishment on the corporate organization, the participant entrepreneurs or startups, and macroeconomic effects.

2.2.3 External Corporate Venturing: The Overarching Concept

Since the distinction between external and internal corporate venturing was recognized already in the 1990s (Ginsberg & Hay, 1994; Sharma & Chrisman, 1999), research on ECV as a particular form of corporate entrepreneurship and dedicated theoretical concept is in a comparable mature stage. In the context of this review, I identified 26 studies that focus on ECV as a theoretical concept or that compare different ECV vehicles fostering early-stage and/or non-equity corporate-startup collaboration (criteria for inclusion of studies in Appendix A2).

Concept: ECV typologies. The first subset describes and creates typologies of corporate venturing programs. Most studies take on the perspective of the corporate parent and investigate different intra- and inter-organizational factors that inform the corporate venturing program's configuration: (i) locus of opportunity within or outside the corporate organization (Hill & Birkinshaw, 2008; Miles & Covin, 2002; Weiblen & Chesbrough, 2015), (ii) strategic orientation towards exploration or exploitation (Hill & Birkinshaw, 2008), (iii) financial commitment including equity and non-equity vehicles (Weiblen & Chesbrough, 2015), (iv) implementation by the parent (Miles & Covin, 2002), and (v) external resource dependence (Biniari, Simmons, Monsen, & Pizarro Moreno, 2015). I intend to create a theoretical basis to

explain how intermediaries perform the matchmaking between corporates and startups outside the corporate's organizational boundaries (Kuratko & Audretsch, 2009; Schildt et al., 2005). Therefore, all selected studies either differentiate between an internal and external locus of opportunity or are concerned with vehicles targeting an external locus of opportunity.

The strategic objective of the corporate is the basis for Hill and Birkinshaw's (2008) typology that differentiates between external exploiter and explorer business units (e.g., CVC units). External exploiter units focus on startups proximate to the corporate's competencies, hereby mainly aiming to generate financial returns. External explorer units engage with startups that are more distant to or are beyond the boundaries of the corporate that have potential strategic value in the future. While the authors found evidence for the described configuration of venture units, the alignment between the corporate's strategic objective and the unit's organizational configuration, including their network, activities, and management system, was limited (Hill & Birkinshaw, 2008). Weiblen and Chesbrough (2015) elaborate on different forms of ECV, and they differentiate between equity and non-equity programs and their direction of the innovation flow—outside-in or inside-out. Examples of outside-in innovation programs are CVC programs, as vehicles taking startup equity, and startup programs that entail a joint project between corporate and startups to subsequently insource external innovation without taking equity (Weiblen & Chesbrough, 2015). Whether the engagement with ventures is undertaken directly or through intermediation is the determining factor for Miles and Covin's (2002) classical typology, additionally introducing the now common distinction between internal and ECV modes. In the case of direct EVC, a firm takes an equity stake in a startup without intermediation, and in the case of indirect EVC, the investment is undertaken with mediation through a VC fund (Miles & Covin, 2002). Biniari et al. (2015) study how the strategic decision about a venturing logic between the corporate parent and the corporate venturing unit is influenced by mutual resource dependence and potential resulting power imbalances.

Resources such as financial capital, human capital (e.g., venturing experience), social capital (e.g., affiliations with corporate sponsors), and symbolic capital (e.g., the corporate venturing program's track record in a sector) are distributed in the triadic structure between the corporate parent, the corporate venturing program, and the external environment (e.g., VC programs). The combination of the resource dependence relationships leads to eight potential corporate venturing program logics. An optimal corporate venturing program logic can, for example, be a VC-market-logic with financial returns as a core goal, in case the dependence on resources from the external environment is high and there is no mutual resource dependence between the corporate and corporate venturing units (Biniari et al., 2015).

Two papers address the conceptualization of family-owned firms' corporate entrepreneurship activities. Randolph et al. (2017) develop typologies for family firms' corporate entrepreneurship intentions. Firms with a strong intention to continue managing the firm and a high ability to identify and acquire external knowledge have the unique ability to engage in corporate entrepreneurship activities to maintain long-term strategic renewal and generate radical innovations (Randolph et al., 2017). The next generation's ECV practices are the focus of (Ramírez-Pasillas, Lundberg, & Nordqvist, 2021's) work. They describe five different practices converging around the obtainment of family approval (obtaining family approval and bypassing family) and the activity's proximity to the family business (family venture mimicking, jockeying in family, and jockeying around family). The five practices form three routes for next-generation venturing: imitating the family-owned business, surpassing the family-owned business, or splitting from the family-owned business (Ramírez-Pasillas et al., 2021).

Antecedents: Corporate internal and environmental drivers for ECV and vehicle selection. The second subset of studies analyzes the antecedents influencing a firm's engagement in ECV activities or the selection of ECV modes. While the literature analyzes

different internal and environmental factors influencing a corporate's engagement in equity-based ECV activities (e.g., CVC, joint venture, or acquisition), research on the antecedents of non-equity modes of corporate-startup engagement is still limited. Generally, the literature describes (i) corporate-internal bricolage as a catalyst of corporate venturing activities (An, Zhao, Cao, Zhang, & Liu, 2018). Concerning equity-based ECV activities, (ii) a firm's performance level relative to its competition (Titus, Parker, & Covin, 2020), (iii) the strategic orientation of the corporate towards exploration or exploitation (Titus, House, & Covin, 2017), and (iv) environmental turbulences influence the engagement or the selection of the ECV mode. Considering non-equity ECV modes, the literature describes (iii) the strategic orientation of the corporate (Miles & Covin, 2002) and (v) environmental uncertainty (van de Vrande, Vanhaverbeke, & Duysters, 2009) as determinants for corporate venturing mode selection.

Bricolage is a catalyst for a corporate's opportunity identification and ultimately corporate venturing activities (An et al., 2018). Bricolage is a source of experiential resource-learning and generates subjective knowledge. Subjective knowledge in turn is a valuable source of entrepreneurial opportunity identification, with more opportunities leading to more corporate entrepreneurship activities (An et al., 2018). While equity-based ECV engagements are not the focus of this thesis, studies investigating their antecedents can help us understand the antecedents of non-equity modes as well. In their assessment of equity-based ECV activities (including CVC, joint ventures, and acquisitions), Titus et al. (2020) show the influence of the firm's performance compared to the aspiration level—namely relative to a peer-based benchmarking to competitors. When the performance falls below the aspiration level, firms engage in fewer ECV activities, and when performance exceeds aspiration levels, more ECV activities were observed. A firm's entrepreneurial orientation negatively moderates the observed relationship (Titus et al., 2020). Additionally, a firm's strategic orientation influences the selection of a venturing mode: firms motivated by exploratory learning objectives tend to

engage more in acquisitions compared to CVC and joint ventures (Titus et al., 2017). If firms operate in a technologically dynamic or research and development-intensive environment, this relationship is attenuated (Titus et al., 2017). Alternatively, Tong and Li (2011), following the real options and logic, find that in uncertain market environments or environmental turbulences, CVC is favored vis-a-vis acquisitions because maintaining more flexibility becomes important.

Generally, ECV is preferred over internal corporate venturing if the corporate aims for quick financial returns (Miles & Covin, 2002) or in the case of family firms not being thwarted by a strong identification with their organization (Prügl & Spitzley, 2021). Non-equity modes are preferred under high environmental uncertainty (van de Vrande et al., 2009). Aside from providing a typology for corporate venturing activities, Miles and Covin (2002) introduce a decision framework indicating that ECV activities—independent of intermediated—should be preferred if the corporate aims to achieve quick financial returns and can be combined with internal activities to achieve a strategic benefit. ECV activities are less preferable compared to internal corporate venturing to achieve organizational development and cultural change (Miles & Covin, 2002). Specifically assessing family firms, Prügl and Spitzley (2021) find that a strong identification of the family with their organization negatively influences the strategic prioritization of ECV activities. Especially when engaging with startups in acquisitive or alliance-forming partnerships, the strong identification leads to an aversion to the potential reputational risk (Prügl & Spitzley, 2021). Only one study by van de Vrande et al. (2009) empirically compares equity and non-equity ECV modes. van de Vrande et al. (2009) show that non-equity alliances are the preferred ECV mode under high environmental uncertainty as such vehicles allow the corporate to remain more flexible with small and reversible commitments. Intra-firm parameters such as the newness of the startup partner, the

technological distance between the potential partner firms, or prior cooperation did not lead to a prioritization of non-equity over equity modes.

Organizational capabilities for ECV success. Third, a small subset of studies deals with organizational capabilities that determine ECV success. These capabilities encompass (i) procedural capabilities long the startup collaboration process (including discovery, incubation, and acceleration; Kim, Steensma, & Heidl, 2021; O'Connor & DeMartino, 2006), (ii) capabilities to establish a suitable ECV governance model (Robeson & O'Connor, 2007), and (iii) in an internal context the capability to acquire legitimacy (Hornsby, Bloodgood, Hayton, & Kuratko, 2013).

O'Connor and DeMartino (2006) developed organizational structure models for radical innovation and holistically analyzed the capabilities corporates need to develop mature radical innovation capabilities—discovery, incubation, and acceleration. Concerning ECV, discovery encompasses the skill to recognize and evaluate external radical innovation opportunities. Incubation is described as the capability to mature radical opportunities into business proposals through experimentation and learning, and acceleration is the capability to develop a business to a level of some predictability in terms of sales and operations so it can be integrated into existing business units (O'Connor & DeMartino, 2006). For the last integration step, the corporate's assimilation or absorption of new firm technologies, the internal inventor network is recognized as a relevant mediator (Kim et al., 2021). High levels of network clustering and its generated structural, relational, and cognitive social capital ease the absorption process (Kim et al., 2021). Additionally, high connectivity between the internal inventor networks favors in-house technologies (Kim et al., 2021).

Focusing on the corporate-level configuration of corporate entrepreneurship governance models, independent of the vehicles employed for corporate entrepreneurship, Robeson and

O'Connor (2007) define propositions for a successful model design. Core elements of a corporate entrepreneurship governance system are the board orientation, board composition, and decision processes, moderated by the portfolio characteristics (i.e., innovation opportunities inside or outside the firm's traditional business, and the size of the portfolio; Robeson & O'Connor, 2007). Concerning the board orientation, they suggest a moderate coupling of the board to the organization as well as high senior leadership involvement (Robeson & O'Connor, 2007). The board should be composed of five members that are innovation center external and internal, functionally diverse, and cosmopolitan. Governing innovation projects with a "bench mentality" and having a higher output aspiration compared to other corporate units are identified as good governance styles (Robeson & O'Connor, 2007).

Considering ECV in an international context, Hornsby et al. (2013) describe how corporate entrepreneurs acquire legitimacy when entering international markets. Going through three phases, corporate entrepreneurs initially acquire pragmatic legitimacy by building internal and external relationships. Normative legitimacy is achieved when the startup is promoted through brokering by corporate divisions or other organizations. A "taken for granted status" or cognitive legitimacy requires complete emersion into the national and cultural context and is easier achieved if the parent corporate is present in the relevant country (Hornsby et al., 2013).

Outcomes: ECV impact on the corporate. The last subset of ECV studies analyzes the effect of ECV activities on the corporate's (i) capabilities or learning (Enkel & Sagmeister, 2020; Keil, 2004; Schildt et al., 2005) as well as (ii) innovation (Keil, Maula, Schildt, & Zahra, 2008; Lai, Chiu, & Liaw, 2010; van de Vrande, Vanhaverbeke, & Duysters, 2011).

ECV has capability-building effects that improve a corporate's explorative learning (Schildt et al., 2005) and its dynamic capabilities to react to change in the environment (Enkel & Sagmeister, 2020). Two learning processes foster the ability of a corporate to engage in ECV

activities in general (Keil, 2004). Linking the explorative and exploitative learning to the ECV modes, Schildt et al. (2005) identify that non-equity ECV modes are more suitable for explorative learning compared to equity modes such as CVC or acquisitions. They explain their results with a comparatively lower risk of non-equity modes (Schildt et al., 2005). Technological relatedness and downstream vertical relatedness between the corporate and the startup make explorative learning less likely (Schildt et al., 2005).

By engaging in ECV, corporates also build their dynamic capabilities. Dynamic capabilities describe a firm's ability to address rapidly changing environments by sensing business opportunities, seizing the opportunity, and integrating external with internal knowledge to drive innovation (Enkel & Sagmeister, 2020). Such capabilities are closely related to the ECV capabilities of discovery, incubation, and acceleration named by O'Connor and DeMartino (2006) as pre-conditions for successfully conducting radical innovation. Hence, continuous engagement in ECV is likely to fuel a company's radical innovation capabilities. Startup programs, accelerators, incubators, and CVC contribute to the development of the firms' sensing capabilities (Enkel & Sagmeister, 2020). More intensive engagements with startups in strategic partnerships and incubation programs also contribute to a firm's sizing capabilities (Enkel & Sagmeister, 2020). To gain knowledge about how to integrate external knowledge and reconfigure its resources, a corporate needs closer engagements with selected startups in incubators, alliances, or CVC programs (Enkel & Sagmeister, 2020). Keil (2004) investigates how corporates build their ECV capabilities, as "the firm's ability to utilize external ventures to develop new capabilities and to reconfigure existing capabilities." He identifies two complementary learning processes: acquisitive learning and complementary learning. The acquisitive learning process is relevant if a firm starts building initial ECV capabilities, and thereby it learns by imitating other organizations and partners and by engaging in personnel transfer. Learning by doing helps the organization to adapt the acquired general capabilities to

its own specific needs. Resource endowments and initial organizational structure affect the development path of a capability and knowledge codification, and social networks help to handle the limits imposed by the initial conditions (Keil, 2004).

Analyses of corporate ECV activities' innovation outcomes emphasize the expansion of a corporate's technological scope as well as a better innovation performance independent of the ECV vehicle. Radical innovation is only fostered by more loosely coupled ECV modes. Engaging in equity ECV modes (including CVC, joint ventures, or acquisitions) can help corporates to broaden their technological capabilities from a focus on specific technologies to a broader range of technology domains (Lai et al., 2010). To build these novel technological capabilities, corporates can acquire new resources and engage in explorative learning through ECV (Lai et al., 2010). Keil et al. (2008) investigated the impact of different ECV vehicles on corporate learning and innovative performance measured by the number of filed patent applications, and they found that strategic alliances and CVC in industries related to the corporate's industry positively impact innovative performance, while joint ventures overall have a positive effect. Assessing the effect of ECV on corporate radical innovation performance, van de Vrande et al. (2011) found that more loosely coupled ECV modes such as strategic alliances or CVC foster the development of radical or breakthrough innovation. In contrast, modes requiring a higher level of commitment and integration negatively impact the creation of pioneering technologies (van de Vrande et al., 2011). In contrast to Keil et al. (2008),[9] they find that non-equity alliances have a particularly strong effect on radical innovation if they are undertaken with companies that have technologies only distantly related to the corporate's—technological newness weakens the effect.

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[9] Hereby I assume that industrial relatedness between companies also implies technological relatedness.

2.2.4 Corporate (sponsored) Hackathons

Hackathons emerged as a phenomenon in the software development context in the mid- to late-2000s. The mode then ventured into the corporate product innovation area, becoming part of the development process of many major tech companies (Ghosh & Wu, 2021; Pe-Than et al., 2019). As accelerated innovation processes hackathons commonly run two to three days and bring together different individuals to create new working products or to solve specific scientific, technological, or societal challenges (Lifshitz-Assaf et al., 2021). The events attract a broad spectrum of individuals with different backgrounds, and participant groups can be startups and corporate employees as well as the general public (Lifshitz-Assaf et al., 2021). Hackathons differ significantly from closed, more programmatic formats such as accelerators or incubators in their condensed timeline, openness for different groups of participants, and relatively open innovation process with limited services. They are similar to accelerators in that the innovation process takes place in groups or cohorts. Otherwise, the vehicles differ fundamentally since accelerators support pre-formed startup teams in accelerating their business through extensive service offerings, and hackathons entail developing initial working products or solving challenges in mostly newly formed teams with limited mentoring or coaching (Cohen et al., 2019b; Lifshitz-Assaf et al., 2021; Pe-Than et al., 2019; Pe-Than et al., 2022). The innovation sprints are organized by non-profit organizations, universities, and corporates. Corporates either initiate public or corporate internal hackathons or act as sponsors for hackathons organized by third parties (Pe-Than et al., 2019). Scientific research on hackathons in general is still scarce, and only six articles in my sample investigate the phenomenon with a corporate lens or use it as a context to study processes with corporate involvement.

Antecedents: Corporate motives for hackathon establishment or sponsorship. Two studies on hackathons address the motives of corporates for organizing or sponsoring hackathons

linked to innovation, organizational change, or employee education. While hackathons are generally initiated to foster innovation, motives also include organizational aspects, such as breaking up functional silos in corporate organizations by creating new social connections or developing company culture towards task flexibility and creativity (Pe-Than et al., 2019). Additionally, learning motives can play a role. Examples are the provision of learning opportunities for employees as well as the development and exercise of new technical and leadership skills in a low-risk environment (Pe-Than et al., 2019). Participants in corporate hackathons become engaged because of the fun factor, learning opportunity, monetary price or social recognition, and networking effects (Pe-Than et al., 2019).

Concept: Hackathon design elements. While studies focus on describing corporate hackathons by introducing a set of strategic, operational, and team-related design elements, no hackathon typologies have been developed so far. As is the case for other EVC vehicles, corporate hackathons are characterized by different design elements. A strategic design element is the purpose or theme of the event that is often oriented toward the corporate organizers' or sponsors' core business area (e.g., banking) or industrial, societal, or technological issues to be solved (Feldmann & Teuteberg, 2021; Lodato & DiSalvo, 2016). Additionally, the conscious selection of participants, including corporate employees, startups, external programmers, or designers, as well as the hackathon projects' fit to the corporate sponsor (e.g., as part of the project evaluation criteria) are of strategic importance and distinguish corporate from non-corporate hackathons (Feldmann & Teuteberg, 2021). Operational design elements comprise the outcome (functional prototype), frequency and intensity of participant involvement throughout the fixed period, incentives and prices, location, and jury composition (Feldmann & Teuteberg, 2021). Focusing on team-related design choices, Pe-Than et al. (2019) add the team dynamic (collaborative versus competitive), team role in project selection, team formation process, and pre- and post-hackathon work to

the list of design elements. The authors discuss the configuration of the design choices in light of the corporate and participant goals (Pe-Than et al., 2019). For example, they distinguish collaborative-style hackathons that enable employee networking, learning, and cultural change from competitive-style hackathons commonly focused on product innovation and cultural change (Pe-Than et al., 2019).

Team composition and dynamics in hackathons. Teams working on hackathon challenges are commonly not pre-existent entrepreneurial or startup teams; rather, they are either formed throughout the hackathon (via self-selection or assignment) or, in the case of corporate hackathons, they are pre-existing corporate project teams (Pe-Than et al., 2019; Pe-Than et al., 2022). Studies focusing on hackathon teams and consider the dynamic nature of the team composition, interaction, and effectiveness. Using hackathons as context to study team composition, Lu et al. (2022) assess the impact of multicultural communication competencies of team leaders on team performance. The team leader's multicultural experiences positively predict team effectiveness, and the team's national diversity moderates this effect (Lu et al., 2022). Focusing on the effectiveness of team collaboration processes in hackathons, Pe-Than et al. (2022) distinguish two types of teams in corporate organized and internal hackathons: pre-existing teams and newly formed flash-teams. Pre-existing teams use hackathons to work on existing projects and coordinate their collaboration as they are used to, which has resulted in effective coordination and relatively complete, functional prototypes. Flash-teams adopt a role-based coordination model and adapt the roles to the context, and often they do not achieve a smooth coordination process and have fewer functional innovation prototypes (Pe-Than et al., 2022).

Topic-oriented hackathons co-organized or sponsored by corporates are discussed as a particular type of hackathon with a focus on societal issues (Lodato & DiSalvo, 2016). Shedding light on how hackathon participants form projects around societal issues, the study

discovers two rather tentative modes of material participation in hackathons. First, groups create prototypes including objects, services, and systems that target the issue of the hackathon and obtain a contextual meaning. In this case, the objects, services, or systems are the first demonstrators to "sell" the team's approach to the issues (Lodato & DiSalvo, 2016). Second, the groups or publics formed in a hackathon are not stable and terminate after the event, which usually does not allow the societal issue to be permanently addressed (Lodato & DiSalvo, 2016).

While the literature does not describe the general success factors for hackathon design, establishment, or execution, it does address the sustainability of created innovations. Although Pe-Than et al.'s (2022) study is not an empirical investigation, the researchers suggest that the sustainability of created innovations depends, first, on its fit to the corporate's products and, second, on the team's ability to find a home within the organization.

Outcomes: Hackathon impact on participants. Finally, the impact of hackathons on the organizer's performance, concerning innovation, organizational change, or learning, has not been investigated in detail. Selectively studies offer insights for the participant side and shed light on the effects of the hackathon format on the participants' prioritization of innovation goals and corporate employee learning. Ghosh and Wu (2021) investigate how the coordination process in hackathons impacts the participant team's prioritization of innovation in comparison to value creation goals when creating prototypes. Hackathons commonly follow an iterative coordination process to prioritize performance goals—a practice that is applied in agile management to make organizations more flexible and adaptive to the environment (Ghosh & Wu, 2021). The iterative coordination with frequent release deadlines and continuous reflection and (re-)prioritization of goals and work steps leads to the prioritization of value creation over the novelty of the created innovations (Ghosh & Wu, 2021). Employees who participate in corporate hackathons report that such experiences contribute to their skill

development, especially concerning their general technology literacy and improved confidence in their learning as well as social networks (Pe-Than et al., 2022).

2.2.5 Corporate (sponsored) Coworking Spaces

In the past decade, CWSs became omnipresent as a reaction to entrepreneurs' need for special flexibility (e.g., to avoid long-term rental contracts) and belongingness to a community (Garrett, Spreitzer, & Bacevice, 2017). CWSs are "subscription-based workspaces in which individuals and teams from different companies work in a shared, communal space" (Howell, 2022). They fundamentally differ from other ECV vehicles in that a mixed set of tenants, including startups, small businesses, freelancers, and independent and remote workers (compared to accelerators and incubators focused on startups), can use the spaces for an unlimited time (compared to fixed-term hackathons and accelerators). Furthermore, no application process is required (compared to hackathons, accelerators, and incubators using a competitive selection process); instead, tenants pay monthly rent (compared to accelerators and incubators that commonly take equity instead of fees). Additionally, while some similarities exist between CWSs and incubators, which focus on providing physical infrastructure and professional services to startups (Rothaermel & Thursby, 2005), CWSs fundamentally differ from accelerators. In contrast to the focus on the workspace provision of CWS, for accelerators, the temporal provision of physical infrastructure is a minor aspect of the service offering that is mainly built on mentorship, education, and network provision (Cohen et al., 2019b). Furthermore, since no program structure exists and there is relatively lower resource provision compared to other ECV vehicles, a fundamental role is ascribed to the CWS community (Bouncken & Reuschl, 2018; Howell, 2022).

Corporates are recognized as sponsors or owners of the CWS, and corporate employees are considered as tenants of external CWSs (Bouncken et al., 2020b; Bouncken & Reuschl, 2018;

Howell, 2022). Nine studies in my sample belong to the nascent CWS literature and address the role of corporates. My sample includes all CWS studies, which generally discuss the role of corporates, as well as studies on corporate CWS.

Antecedents: Environmental drivers and corporate motives for CWS establishment. The first subset of studies addresses the reasons for CWSs' emergence and corporate motives behind the establishment of CWSs. Taking an institutional perspective on CWSs' emergence and rapid global distribution, Bouncken et al. (2020b) identify diverse environmental and social drivers. Initially, CWSs emerged to serve their tenants' need to engage in social networks by fostering knowledge exchange and relationships (Bouncken et al., 2020b). The global distribution of CWS is fueled by three factors: the digital connectedness of the networked CWS tenants advertising the model, CWSs' boundary spanning relationships with reputable organizations, and their recursive relationships between tenants, CWS providers, and external organizations (Bouncken et al., 2020b).

Corporate CWS literature describes the motives linked to innovation, employee satisfaction, employee way of working, and cost saving. Corporates with an innovation motive try to establish task-oriented collaborations between different actors in CWSs (Nagy & Lindsay, 2018). "Future proofing" is distinct from the task-oriented development of innovations. It describes the open-ended discovery of ideas by corporate employees through their interaction with people outside the core team or even the organization (Bouncken & Reuschl, 2018; Howell, 2022; Nagy & Lindsay, 2018; Spreitzer & Lyndon, 2015). Aiming for organizational rejuvenation, corporates also employ CWS to confront employees with new working practices or to increase employee job satisfaction through higher flexibility (Howell, 2022; Nagy & Lindsay, 2018; Spreitzer & Lyndon, 2015). Finally, the CWS can contribute to the reduction of real estate costs (Spreitzer & Lyndon, 2015).

Concept: CWS design elements and typologies

Table 6: Overview of CWS Typologies

Dimension	Studies	Typologies
Participant benefits	Bouncken, Ratzmann, Barwinski, & Kraus, 2020a	Agility housing, knowledge housing, social housing
Openness for participants	Nagy & Lindsay, 2018	Open houses, campsites
	Bouncken & Reuschl, 2018	Corporate private CWS

Due to the nascent state of scientific research on CWS few studies describe general and corporate CWS (see Table 6). As the first step towards a holistic description, the following design elements of general CWS are introduced: space (including size and interior), offerings (including lease terms, amenities, events, and training), community size, member composition or type of CWS user, and partners (including sponsors and partnerships; Bouncken & Reuschl, 2018; Howell, 2022). Two CWS typologies focus on (i) the CWS's impact on tenant work satisfaction (Bouncken et al., 2020a) and (ii) the CWS's openness to the public (Nagy & Lindsay, 2018). Basing typologies on the CWSs' contribution to tenant work satisfaction, Bouncken et al. (2020a) distinguish between three different CWS types: agility housing, knowledge housing, and social housing. These typologies are not mutually exclusive but address different patterns in which the CWS contributes to increased tenant satisfaction. Agility housing CWSs empower tenants to organize their work in a more agile manner through more open, permeable, and fluid structures. Knowledge housing CWSs enable the tenants to share tacit knowledge or to create mutual knowledge. Finally, social housing refers to CWSs as vehicles to reduce social isolation by creating communities or social homes (Bouncken et al., 2020a). The first typology of corporate CWS was developed by Nagy and Lindsay (2018) who distinguish CWSs based on their openness to the public. Open houses are workspaces open to the public and hereby support the corporate parent's brand building. Campsites are temporary,

innovation-oriented spaces where employees of the parent corporate co-locate with other stakeholders (Nagy & Lindsay, 2018). Complementary to the described public and semi-public structures, Bouncken and Reuschl (2018) recognize private corporate CWS as an additional form, with employee status being a prerequisite for tenancy.

Social dynamics toward community creation. While the embeddedness into a community is frequently mentioned as the most important reason for CWS tenancy (Bouncken & Reuschl, 2018; Howell, 2022), only Garrett et al. (2017) shed light on the tenant's collective actions contributing to the creation of a community. Building on tenants' shared desire for community, endorsing happens when tenants join the CWS and comprise a shared community vision, self-selection of tenants appreciating community membership, and the mutual reinvigoration of the community vision. Additionally, two groups of tenants are identified: First, passive tenants who sustain the community sense through encounters of social norms, shared commonalities, and potential membership benefits. Second, active members who engage in community activities and thereby co-create the community (Garrett et al., 2017).

Factors for CWS success. Studies in the third category describe success factors for CWS establishment, design, and operation. Using a corporate CWS and lab spaces as a context to study the establishment of open innovation initiatives in corporate organizations, Wikham and Styhre (2017) identify success factors for the implementation of such initiatives. The successful implementation of the initiative was supported by strong senior management support as well as a CWS value offering that is designed using existing knowledge and resources (Wikham & Styhre, 2017). Positive communication of the initiative paired with the initiative's signaling effect, indicating the company's structural rejuvenation, fueled a positive employee reception (Wikham & Styhre, 2017). Concerning the physical design of a CWS, it is important to integrate the tenants' needs (social aspects) with material elements of the space to ensure social isolation and stress are not increased (Bouncken, Aslam, & Qiu, 2021; Nagy & Lindsay, 2018).

Bouncken et al. (2021) suggest that the design of a CWS influences the flow of communication between the tenants, collaboration, and innovation. Therefore, the special architecture of a CWS needs to enable physical proximity and provide shared facilities for physical and virtual connectivity, while simultaneously giving room for privacy (Bouncken et al., 2021). Operationally, community managers shaping the culture and programs are key to a CWS's success (Nagy & Lindsay, 2018). Finally, a conscious curation of tenants (including startups, entrepreneurs, freelancers, researchers, and academics) is crucial if corporates seek to run an innovation, project-oriented CWS (Nagy & Lindsay, 2018).

Outcomes: CWS impact on corporate and tenants. No studies to date provide quantitative evidence for CWSs' treatment effects on entrepreneurs and other tenants or benefits for corporate parents/sponsors. Several conceptual and qualitative studies address potential benefits, including (i) for the different stakeholders' (organizational) learning, (ii) for work satisfaction and organizational climate, and (iii) for reputation. Bouncken and Reuschl (2018) assume that CWS tenancy has an individual learning and respective performance effect. They state that two moderators influence the tenants' learning positively: First, the institutional environment of the CWS promotes entrepreneurial self-efficacy, and second, the lack of hierarchy fuels trust and community (Bouncken & Reuschl, 2018). While not specifically addressing the effect of CWS tenancy on tenant performance, Howell (2022) describes the benefits of CWSs for entrepreneurs' efficiency, flexibility, and legitimacy. Bouncken et al. (2020a) identify a positive impact of CWS tenancy on work satisfaction among tenant entrepreneurs, freelancers, and corporate employees. Work satisfaction is influenced by the provided community, autonomy, participation, linkage multiplicity, and mutual knowledge creation (Bouncken et al., 2020a). In turn, the community emerging in CWS contributes to the identification of solutions for the tenant's challenges and creates motivation as well as social support (Howell, 2022). Taking on the perspective of the corporate parent/sponsor, Wikham

and Styhre (2017) identify that the emerging exchange between corporates and startups in CWS supports the corporate's understanding of how to translate its resources into new domains. Additionally, it increases the exploitative orientation of the company and its employees (Wikham & Styhre, 2017). Conclusively, a more open and dynamic climate in the corporate organization as well as an improved entrepreneurial image, both internally and externally, are positive long-term effects of CWS establishment (Wikham & Styhre, 2017).

2.2.6 Corporate (sponsored) Incubators

Emerging in the 1950s, the incubator model developed in three waves. It started as a mere provider of spaces in local communities and universities to fuel economic growth and job creation, and in the second wave, it developed into a provider of knowledge-based business development services (Aerts et al., 2007; Becker & Gassmann, 2006a; Mrkajic, 2017). More recently, incubators have moved into a phase characterized by diversification of incubator types and growth.

The literature characterizes current incubators as intermediaries between startups and their business environment, which enables access to rich resources (Aerts et al., 2007; Amezcua et al., 2013; Becker & Gassmann, 2006a; Mrkajic, 2017). While accelerators are sometimes described as a new type of incubator (e.g., Pauwels et al., 2016), the literature and this thesis treated the two as distinct vehicles. First, the program design differs: incubators are not time-limited with different start and end times for participating startups (Rothaermel & Thursby, 2005), and accelerator participant startups start and end together (cohort structure) within a fixed timeframe (Cohen et al., 2019b). Second, accelerators are oriented toward and support startup learning by offering mentoring and educational services throughout the program (Cohen et al., 2019b; Hallen et al., 2020), whereas incubators typically provide only physical infrastructure and administrative services (Rothaermel & Thursby, 2005). Abundant research

accompanying the different phases of incubator development brings about different definitions (Table 4 for examples) as well as typologies for the vehicle (Table 7). Corporate sponsored or run incubators (i.e., CIs) started to take root in practice as an approach for corporates to explore new products and services (Koetting, 2020). Gassmann and Becker (2006) define CIs as "an organizational unit of an established company with the mission to generate knowledge and to transfer that knowledge into existing business units." Whereas the definition focuses on corporate internal or operated incubators, incubators can also be sponsored by corporates and operated by an external entity. The business incubator literature recognizes incubators' role as a bridging entity between tenant startups and corporates providing external resources (Amezcua et al., 2013), but CIs are distinct in that they are embedded into or are financially dependent on the corporate organization and are bound to the pursuit of the corporates' innovation goal (Gassmann & Becker, 2006; Koetting, 2020). Therefore, I focus on studies describing incubators established and/or operated by corporates or simply sponsored by corporates. A total of 23 studies in my sample particularly focus on CIs.

Antecedents: Corporate motives for CI establishment or sponsorship. Several studies discuss the corporates' motives for sponsoring or establishing internal CIs: (i) new revenue streams through insourcing of disruptive products (Becker & Gassmann, 2006a; Kruft & Kock, 2019), (ii) improvement of existing revenue streams through complementary technologies (Becker & Gassmann, 2006a), (iii) cultural change, and (iv) the development of external ecosystems and networks (Hughes, Ireland, & Morgan, 2007; Kruft & Kock, 2019). Understanding the motive of the parent corporate to establish or sponsor an incubator plays an important role in the literature since it has consequences for the business model and the design of the incubators. Mentioning the emergence of CIs early on, Allen and McCluskey (1991) identify the creation of economic value in the form of new products or services as the main motive to sponsor CIs. More recent studies confirm the creation of new revenue streams as a

core motive and add the improvement of existing ones (Becker & Gassmann, 2006a; Kruft, 2020). In more detail, corporates aim to explore external knowledge as well as to utilize and speed-up innovation with internal knowledge by working with CIs (Becker & Gassmann, 2006a; Kruft, 2020; Zedtwitz, 2003). In the former case, corporates scan the external market to identify new disruptive technologies for subsequent insourcing or complementary technologies to increase the demand for their products (Becker & Gassmann, 2006a). Internal non-core technologies can be monetized or technologies can be developed to create breakthrough innovations (Becker & Gassmann, 2006a; Zedtwitz, 2003). According to Grimaldi and Grandi (2005), the exploitation of internal knowledge can even be targeted by the creation of additional business units/spin-outs. The literature names the cultural change of the corporate toward a more entrepreneurial organization and the development of external ecosystems and networks as additional motives (Hughes et al., 2007; Kruft, 2020).

Concept: CI design elements and typologies.

Table 7: Overview of CI Typologies

Dimension	Studies	Typologies
Business incubator typologies with CI as one type		
Sources of value added	Allen and McCluskey (1991)	For-profit property development incubators, not-for-profit development corporation incubators, academic incubators, for-profit seed capital incubators, hybrid incubators, corporate incubators
Competitive scope, strategic objectives	Carayannis and Zedtwitz (2005), Zedtwitz and Grimaldi (2006)	Regional business incubators, university incubators, independent commercial incubators, company-internal incubators, virtual incubators
Institutional ownership/profit vs. non-profit	Grimaldi and Grandi (2005)	Corporate private incubators, business innovation centers, university business incubators, independent private incubators
Resource availability, resource absorption	Tang et al. (2021)	For-profit incubators, cooperative incubators, non-profit socially driven incubators
CI typologies		
Source of technology, type of technology	Becker and Gassmann (2006a), Becker and Gassmann (2006b)	Fast-profit incubators, leveraging incubators, insourcing incubators, market incubators

Objectives and strategies	Kruft and Kock (2019)	Company sustainer, company explorer, outside-in business unit support, inside-in business unit support, proximate confidential incubator, proximate exchange incubator, distant confidential incubator, distant exchange incubator
Stage of startup development	Mrkajic (2017)	Nascent incubation model, seed incubation model

The first set of studies describes CIs and defines the typologies of general incubators as well as CIs. Different dimensions determine incubator typologies including strategic elements such as (i) the institutional mission or strategy of the parent organization, (ii) the focus on an internal or external locus of opportunity, and (iii) the focus on particular industrial sectors, markets (local, national, international), or ventures in particular development stages (Carayannis & Zedtwitz, 2005; Grimaldi & Grandi, 2005; Zedtwitz & Grimaldi, 2006). Programmatic aspects are (iv) the location and (v) the incubation period and services offered (e.g., physical infrastructure, office support, access to capital, process support such as coaching or mentoring, and networking opportunities). Finally, organizational characteristics encompass (vi) the sources of incubator financing and (vi) the management team (Carayannis & Zedtwitz, 2005; Grimaldi & Grandi, 2005; Zedtwitz & Grimaldi, 2006). Whereas incubator and accelerator typologies may be based on similar dimensions (e.g., a focus on the strategic motive), in the context of this thesis I distinguish the typologies due to the clear differences between the vehicles in the program structure (i.e., accelerators' fixed term, cohort-based structure) and the focus of services (i.e., accelerators' learning orientation).

The first literature stream recognizes CIs as distinctive incubator types and differentiates them from other incubators, typically using the dimensions of sponsorship (public versus private) and/or the financial goals (non-profit versus for-profit) for classification. Initially, Allen and McCluskey recognized in 1991 the emergence of CIs as a new type of incubator. They developed an initial incubator typology along a continuum from real estate to business development services and based on the motive of the incubator. While identifying CIs as an

emerging phenomenon, they do not attribute this type to the described continuum because "so few of these exist, and they are more experimental than the other types" (Allen & McCluskey, 1991: 65). Grimaldi and Grandi (2005) apply the two dimensions to distinguish corporate private incubators from business innovation centers, university business incubators, and independent private incubators. Zedtwitz and Grimaldi (2006) and Carayannis and Zedtwitz (2005) follow a similar logic and only add virtual incubators as a dedicated type. The mentioned typologies describe CIs as a part of a parent corporate, and they service the corporate's political interests and development objectives (Carayannis & Zedtwitz, 2005).

The literature discusses several factors that distinguish CIs from other incubator types. CIs are described as profit-oriented institutions, and they either focus on an internal locus of opportunity or involve early-stage external startups in exchange for equity (Grimaldi & Grandi, 2005; Zedtwitz, 2003; Zedtwitz & Grimaldi, 2006). They provide financial, high-value assets, specialized services, and a network within the corporate organization (Grimaldi & Grandi, 2005). The high-value assets and services distinguish them from publicly installed incubators that focus on tangible assets and commodities at a low price point (Grimaldi & Grandi, 2005). Additionally, the incentivization of entrepreneurial team learning, a strong management commitment to support the startups, and access to a network of strategic partners set this incubator type apart (Grimaldi & Grandi, 2005; Zedtwitz & Grimaldi, 2006). Focusing on incubators in China, Tang et al. (2021) introduce a new typology of CIs. They distinguish between the dimensions of entrepreneurial resource availability (i.e., resources an incubator provides to the tenants) and entrepreneurial resource absorption (i.e., the ability of startups to absorb the provided resources; Tang et al., 2021). For-profit incubators, including CIs, are characterized by high resource availability and assist startups in the absorption of the provided resources. Such incubators focus on high-potential, early-stage startups and the provision of high-value resources and services (Tang et al., 2021). Investigating institutionally void

environments, mainly in developing economies, Mrkajic (2017) distinguishes two incubator types: the nascent incubation model and the seed incubation model, whereby the latter is sponsored by private corporates. The seed incubator model supports seed-stage startups in managing the void of commercial institutions during a product launch. Building on corporate resources such as business expertise and a social network, the incubator supports startups' market reach (Mrkajic, 2017). In comparison, nascent incubators are concerned with entrepreneurial skills and business capacity development (Mrkajic, 2017).

Two studies particularly focus on the development of typologies for CIs. Considering the strategic goal of the CI, Becker and Gassmann (2006a) introduce four types of CIs: fast-profit incubators, leveraging incubators, insourcing incubators, and market incubators. The former two incubator types focus on the development of internal innovations by either spinning out corporate-internal non-core technologies or connecting internal research and development and marketing units to support the introduction of new technologies into the market (Becker & Gassmann, 2006a). The two latter models focus on loci of opportunities outside the organization. Insourcing incubators focus on scanning the market for disruptive startups to invest in and potentially insource into the corporate organization. Market incubators seek external complementary technologies to increase the demand for the corporate parent's products (Becker & Gassmann, 2006a).

A second approach to CI typologies is suggested by Kruft and Kock (2019), who distinguish CI types comprehensively based on five objective dimensions and five strategy dimensions. The clustering distinguished the following CI business objectives: cultural change, the support of business units, new revenue streams, the acceleration of innovation, external ecosystem development, and network-building. Additionally, strategic approaches include idea source (internal, external), innovation type (disruptiveness), support type (financial versus mentoring), location (special distance to parent), and openness of interaction between the incubator and

new businesses. The first two CI types are characterized by the corporate organization's strategic objectives (external ecosystem development, network-building, and the acceleration of innovation processes). While the company sustainer aims to improve revenues and corporate culture, the company explorer has no clear financial or strategic goals (Kruft & Kock, 2019). In contrast to the previous types focused on the corporate organization as a whole, the outside-in business unit support and the inside-in business unit support assist the business units, and they only vary in their orientation towards external ecosystem development and network-building. Incubators differentiated along the strategy dimensions can initially be clustered according to their spatial proximity to the parent corporate. The proximate confidential incubator focuses on external idea sources with a tendency for confidentiality, while the proximate exchange incubator focuses on internal and external ideas emphasizing transparency and exchange. Finally, while both are spatially distant from the parent corporate, the distant confidential incubator varies from the distant exchange incubator in its openness for interaction, its orientation towards the extension of the core business in contrast to its disruption, and the provision of more individual support (Kruft & Kock, 2019).

CI selection, incubation, and corporate integration. Several studies investigate the incubation process from selection to incubation and later on integration into the corporate parent organization. As the first step of the incubation process, the selection of startups matching the corporate parents' strategic goal and having a developed business plan and high growth potential is of crucial importance (Becker & Gassmann, 2006b). While CIs use different screening and selection criteria including financials, market indicators, and the management team composition, they tend to overweight the market compared to the management team and the financials (Aerts et al., 2007). Using a balanced set of screening and selection criteria would lead to the selection of more viable CI tenants (Aerts et al., 2007). Moreover, entrepreneurs select incubators based on their preferences for the resources offered (van Weele, van

Rijnsoever, Groen, & Moors, 2020). van Weele et al. (2020) distinguished three groups of entrepreneurs based on their CI resource preferences: ambitious, balanced spinoffs, innovation-driven funding seekers, and self-made individualists (van Weele et al., 2020). Ambitious, balanced spinoffs value CIs for their associated legitimacy, access to corporate resources globally, and acquisition as an exit opportunity. The legitimacy associated with CI's corporate affiliation is even more relevant for the entrepreneur's incubator selection if they have previous incubator experience (van Rijnsoever & Eveleens, 2021). While innovation-driven funding seekers are ambivalent between corporate and independent incubators, as they value CIs for their network, self-made individualists prefer independent incubators (van Weele et al., 2020).

After startups are selected to participate in the CI, the terms of participation are negotiated (Becker & Gassmann, 2006b; Grimaldi & Grandi, 2005). Employing CI as an instrument to invest in startups by taking equity stakes is a distinctive feature of CIs compared to other incubators (Block, Colombo, Cumming, & Vismara, 2018; Grimaldi & Grandi, 2005). Throughout the incubation process, which is in contrast to acceleration processes that are not time-limited and cohort-based, CIs provide basic services such as space, administrative support, and business development services. The provided network within the corporate organization and with external strategic partners as well as high-value specialized services distinguishes them from other incubator types (Allen & McCluskey, 1991; Bøllingtoft & Ulhøi, 2005; Grimaldi & Grandi, 2005; Hughes et al., 2007). In comparison, accelerator services (e.g., mentorship and educational components) are oriented toward startup learning (Hallen et al., 2020). Additionally, Dutt et al. (2016) show that privately sponsored incubators, in line with corporate resource endowment, are more inclined to offer financial capital services and less often provide spaces. However, since private incubators are more active in markets at later development stages, they have fewer incentives to provide financial services to startups already covered by other institutions (Dutt et al., 2016). The provided network access allows

tenant startups to benefit from technical knowledge and management expertise (Grimaldi & Grandi, 2005).

However, the extent to which provided networking opportunities contribute to social capital, and thereby value creation of tenant startups, depends on their networking behavior. Hughes et al. (2007) suggest that continuous interaction between tenant startups helps them to pursue new projects and develop innovations to accelerate their business development cycle. The interaction is valuable because startups can share and draw on each other's resources as well as acquire knowledge on resource usage (Hughes et al., 2007), comparable to accelerators fostering a generalized exchange of resources between participant startups (Krishnan et al., 2021). Additionally, Barbero et al. (2014) and Becker and Gassmann (2006b) find that a knowledge exchange between startups and corporate business units occurs, whereby the units give startups access to technology, commercial market, and management knowledge. Different CIs build on different types of knowledge throughout the incubation process and share this knowledge with startups (Becker & Gassmann, 2006b). CIs working with disruptive startups in the market build on technological knowledge to identify startups that offer promising and high-potential technological innovations and those that also match with the parent corporate (Becker & Gassmann, 2006b). If incubators support the development of external non-core technology startups to develop a market for their products, they use and share complementary market knowledge (Becker & Gassmann, 2006b). Thereby, CIs provide startups with an understanding of customer needs and show them how to identify solutions for these needs (Becker & Gassmann, 2006b).

The literature describes different organizational and governance mechanisms to create connections between CIs and corporates throughout the incubation process. One mechanism is the establishment of committees or advisory boards staffed with business unit executives supervising the startup activities (Chen & Kannan-Narasimhan, 2015). When staffing the

boards, it is essential to consider that traditional executives tend to show an excessive bottom-line mentality and a bias toward existing business units' interests (Chen & Kannan-Narasimhan, 2015). Additionally, contact persons within business units can provide tenant startups with access to business unit information or network (Becker & Gassmann, 2006b) Contact persons help to reduce the search effort for startups and increases business unit commitment (Becker & Gassmann, 2006b).

The integration of successful startups into the corporate parent organization can occur at different stages of the startups' incubation process, and identifying the right timing is crucial for integration success (Chen & Kannan-Narasimhan, 2015; van Burg, Jager, Reymen, & Cloodt, 2012). Regarding the transfer of startups from the CI into functional business units, Chen and Kannan-Narasimhan (2015) observed two typologies. The first CI type initiates the startup project and involves the business unit early on. The business unit funds the CI project or co-incubates the startup, which naturally transfers into the business unit as it matures. The second CI type initiates, funds, and incubates the startups, involving the business unit gradually with more promising financial viability at later stages of the startup's maturation process (Chen & Kannan-Narasimhan, 2015). van Burg et al.'s (2012) general design principles for a successful transition are likely to be relevant for independent as well as corporate-founded startups, even though only one external startup was included in the sample of six case companies. van Burg et al. (2012) emphasize the relevance of a preparation phase before the transition, in which a dedicated transition team performs a readiness and capability assessment to determine the gap between the business unit and the startup concerning technology, business model, and culture. Training and personnel transfer support the mutual understanding of both organizations (van Burg et al., 2012). Throughout all transition phases, champions should guide the startup through the corporate organization. After the transition, the business unit should retain a degree of autonomy for the startup (e.g., direct reporting lines, quick decision-making)

and adapt the performance management system to fit the uncertainties of the startup's activities (van Burg et al., 2012).

Outcomes: CI impact on corporates, tenants, and regional economy. Studies investigating business incubator performance are numerous and tend to show a short-term impact on participant startup's survival, growth rates (especially number of employees), adoption of advanced technologies, and access to public funds directly after graduation (e.g., Colombo & Delmastro, 2002; Amezcua et al., 2013; Stokan, Thompson, & Mahu, 2015). In the long term, the discontinuation of incubator support has a negative effect on startup survival (Schwartz, 2009). Additionally, incubators have positive macroeconomic effects on local employment and income growth as drivers of tax revenues (Markley & McNamara, 1995; Sherman & Chappell, 1998).

Only a few studies explicitly discuss the performance of CIs along different metrics. An incubator is described as successful if it meets the goal for which it was created (Barbero, Casillas, Ramos, & Guitar, 2012; Hausberg & Korreck, 2020). In my sample of studies, CI performance is measured along the metrics (i) participant success (Allen & McCluskey, 1991; Woolley & MacGregor, 2021), (ii) program survival (Gamber, Kruft, & Kock, 2020), (iii) contributions to corporate innovation and growth (Barbero et al., 2012; Barbero et al., 2014), and (iv) ecosystem-related impact. While Allen and McCluskey (1991) initially did not identify a relationship between incubator services/typology and performance (including the variables number of jobs created and number of tenants graduated) other than the size and age of incubators, other studies show a performance effect.

Studying the effects of private incubator tenancy on nanotechnology startup performance (CIs being part of the sample), Woolley and MacGregor (2021) identify a positive effect on the acquisition of government grants and VC funding. This effect can likely be attributed to the

VCs' positive interpretation of private incubator participation. However, the authors do not identify an impact of the CI service bundle including buffering and bridging resources on the VC prospects (Woolley & MacGregor, 2021). Startups may also benefit from the complementary effects of private and university incubators since university incubators help startups to avoid failure (Woolley & MacGregor, 2021).

Gamber et al. (2020) assess the conditions for incubator survival. Considering the bi-directional relationships to parent corporate as well as tenant startups a CI needs to manage, Gamber et al. (2020) investigate whether the resource investments of the corporate need to be in equilibrium with the contributions of the three agents to ensure incubator survival. While the parent's investments into the CI need to be in equilibrium with the CI contributions towards the parent, the incubator can overinvest in its tenants compared to the startups' immediate contributions to the CI without endangering its survival. According to Gamber et al. (2020), to participate in the CI high-potential startups need to consider that the incubator invests more resources (e.g., financial, material, human, and knowledge) compared to their own contributions. Additionally, startups are of value to the parent corporate mainly in the mid-to-long term. To satisfy the parent's strategic goals, the CI needs to overinvest upfront into the startups to accelerate their mid- to long-term development (Gamber et al., 2020). Hence, the investment disequilibrium towards the startup is necessary to create an equilibrium towards the parent corporate (Gamber et al., 2020).

Further, studies elaborate on the CI's contribution to the corporate parent's performance metrics. Barbero et al. (2012) investigate the performance of different incubator types by comparing incubator outputs to performance goals. For private incubators, synonymous with CIs in this study, the authors show an effect on sales growth in the region, new product launches, and patent generation (Barbero et al., 2012). They conclude that the identified growth is interpreted as returns for the parent corporate (Barbero et al., 2012). Regarding innovation

as an output variable, Barbero et al. (2014) show that different types of incubators produce different quantities and types of innovation. Specifically, CIs as well as basic research incubators generate more innovations compared to university or regional development incubators. Furthermore, CIs bring about more technological and organizational innovation and relatively less product innovation (Barbero et al., 2014).

Finally, Haugh (2020) investigates how incubators contribute to poverty alleviation in developing economies. While not directly classifiable as CIs, incubators financed through corporate philanthropy impact poverty alleviation by positively developing economies in two ways: they improve the financial viability of a startup and increase the entrepreneurs' wealth (Haugh, 2020). First, incubators teach the entrepreneur how to establish an innovative, sustainable, and market-oriented startup. Second, the entrepreneur's individual financial, human, social, and cultural wealth grows through incubator participation (Haugh, 2020).

2.2.7 Comparing Different ECV Vehicles to Corporate (Sponsored) Accelerators

This section compares the previously introduced vehicles—hackathons, CWSs, and CIs—in terms of their concepts, antecedents, mechanisms (i.e., participants' treatment within the vehicles and success factors), and outcomes. I focus on contrasting CAs to the other programmatic, early-stage ECV vehicles. Table 8 summarizes the main differences between the vehicles. The corporate motivation, as well as the conceptions, highlight the differences between the vehicles since the literature is rather nascent and only allows for limited comparison.

Table 8: Comparison of CAs with Other ECV Vehicles

Category	Vehicle	Main Similarities and Differences to CAs
Antecedents/ corporate motives	**Overarching**	- Similar motives across vehicles: monitoring and identification of innovations, cultural rejuvenation - Degree of innovation maturity and therefore expected integration of the startup or innovation into the corporate organization is the main differentiating factor
	CA	Degree of expected integration: - Materialization of innovations into collaboration projects and/or organizational integration - Financial integration through equity shares
	Hackathon	Degree of expected integration: initial product or solution prototype in sponsors' core business area
	CWS	Degree of expected integration: open-ended exchange or task-oriented collaboration between corporate employees and startups
	CI	Degree of expected integration: materialization of innovations through insourcing of incubated startups or their technology
Concept	**Overarching**	- Stark differences in services offered and hence vehicle concepts - All vehicles adapted to corporate goals and needs
	CA	- Type and stage of participants: infancy, early growth startups - Characteristics of services offered: time-bound cohort structure with focus on entrepreneurial learning process (e.g., physical space, administrative support, mentoring and training, investments/capital, graduation event)
	Hackathons	- Type and stage of participants: no startup teams but individuals forming temporary project teams, corporate project teams - Characteristics of services offered: limited timeframe (typically 2–3 days) innovation sprints aimed to develop an initial solution or prototype
	CWS	- Type and stage of participants: diverse tenant groups including pre-venture, infancy, early growth startups, freelancers, or corporate employees - Characteristics of services offered: focus on shared workspace with administrative support, networking, and public events to paying tenants
	CI	- Type and stage of participants: earlier stage startups in pre-venture, infancy stage - Characteristics of services offered: focus on provision of scarce resources claimed by startups at different times including among others workspaces, administrative support, business development services, and network within corporate organization
Mechanisms	**Overarching**	- Participant selection with different relevance across vehicles - Treatment mechanisms and processes studied with different focus across the vehicles, focus topics of CA and CI comparable
	CA	- Selection: in each cohort careful selection of high-potential startups matching corporate goals - Treatment: focus on services provided, in general, accelerator literature also addresses effects on entrepreneurial learning, bounded rationality
	Hackathon	- Selection: selection of participant groups in design phase - Treatment: focus on project team composition and dynamics
	CWS	- Selection: selection of participant groups in design phase - Treatment: focus on created community

	CI	-	Selection: careful rolling selection of high-potential startups matching corporate goals
		-	Treatment: focus on services provided
Outcomes	**Overarching**	-	Few quantitative studies (only CI), no comparability across vehicles
	CA	-	Participant startups: do not increase the startups' funding amount, but increase valuation
		-	Corporate sponsor: access to market knowledge, improved employee skills in startup collaboration management, employees' failure attitude
	Hackathon	-	Participants: employees' skills and confidence in their learning capabilities
		-	Corporate sponsor: n/a
	CWS	-	Participants: individual learning, employee work satisfaction
		-	Corporate sponsor: employees' capability to translate available resources
	CI	-	Participant startups: increase in government grants and VC funding
		-	Corporate sponsor: new products and sales growth

Concept. While the four vehicles are established or sponsored by corporates with innovation as the main motive (see section on Antecedents), they differ conceptually as various sponsorship models exist. Some vehicles are established and operated by one corporate (e.g., Nagy & Lindsay, 2018; Shankar & Shepherd, 2019), but in general externally operated ECV vehicles can either have one corporate, multiple corporates, or multiple different sponsors (e.g., corporate and government sponsors; Cohen et al., 2019a; Moschner et al., 2019). The sponsorship model is often not specified and is seldom discussed as a parameter for ECV vehicle design and/or theoretical conceptualization, but it is particularly present in the CA literature (e.g., Moschner et al., 2019; Cohen et al., 2019b). As described in Table 8 the vehicles differ concerning the type (e.g., entrepreneurial individuals, temporary project teams, or startup), the stage of the participants (e.g., idea, pre-venture, infancy, or early growth), the characteristics or service offerings, and the resource investment by the operator (Bergman & McMullen, 2021).

Despite the differences, all four vehicles are adapted to the corporate operator's or sponsor's goals and needs. For example, corporate hackathons commonly focus on the corporate's core business area (e.g., banking) or industrial, societal, or technological issues particularly relevant

to the corporate (Feldmann & Teuteberg, 2021; Lodato & DiSalvo, 2016). The literature emphasizes that the design of the ECV vehicles and their value offering needs to build on the corporate's existing knowledge and resources while reflecting the participants' needs (Bouncken et al., 2021; Nagy & Lindsay, 2018; Wikham & Styhre, 2017). The knowledge the corporate builds in ECV establishment and operation and which it passes on to the participants (e.g., technical or market knowledge) can differ depending on the particular goal of the ECV (Becker & Gassmann, 2006b).

My review summarized conceptual differences between the ECV vehicles. First, hackathons are time-bound competitions focused on individuals (e.g., external programmers, designers, and entrepreneurs) or corporate project teams, who are screened and selected with limited effort (Feldmann & Teuteberg, 2021; Pe-Than et al., 2019). The agile innovation sprints aim to develop a task-based solution or functioning prototype (Feldmann & Teuteberg, 2021; Pe-Than et al., 2019). Second, CWSs' main service is the provision of workspace to paying tenants such as entrepreneurs, freelancers, or corporate employees for a flexible period without particular tenant screening or selection (Lifshitz-Assaf et al., 2021; Pe-Than et al., 2022). Third, CIs are distinct from CWS; in addition to providing workspace, CIs offer other services to a carefully selected group of tenants, such as financial support, high-value assets, specialized services, and network access within the corporate organization (Becker & Gassmann, 2006a; Grimaldi & Grandi, 2005). Furthermore, CIs are explicitly created with the mission to transfer the incubated innovations into the corporate organization or explicit business unit (Becker & Gassmann, 2006a). Finally, comparable to the other ECV vehicles, CAs are designed to reflect corporate strategic goals (e.g., venture emergence or strategic fit; Shankar & Shepherd, 2019). CAs most closely resemble CIs in their service offering, while still being distinct in their time-bound nature, cohort structure, and extensive program offering including mentoring and training (Cohen et al., 2019b; Shankar & Shepherd, 2019). To varying extents, CIs provide

access to corporate resources and customers, corporate management, and functional units (Cohen et al., 2019b; Richter, Jackson, & Schildhauer, 2018; Shankar & Shepherd, 2019), and they aim to realize the corporate integration of the innovation or an investment into the startup (Shankar & Shepherd, 2019). Therefore, they are comparable to CIs in their role as a link or bridge into the corporate organization (Amezcua et al., 2013).

Antecedents and motives. While environmental and corporate-internal antecedents for the engagement in ECV activities are only studied in articles on ECV as a theoretical concept, studies on the vehicles focus on corporates' strategic and financial motives (see Table 8 and Figure 3). General ECV research describes that corporate venturing or ECV activities are fueled by corporate internal factors, such as bricolage as a driver of entrepreneurial opportunity identification as well as performance above the firms' aspiration level (An et al., 2018; Titus et al., 2020). When assessing the choice of ECV vehicles, under environmental turbulence and uncertainty, corporates tend to favor less integrated or non-equity ECV modes, such as CAs and CIs, to remain flexible (Tong & Li, 2011; van de Vrande et al., 2009). Hence, research indicates that CAs are preferable for companies operating in technologically turbulent industries and/or in that case the technologies to be sourced are new with unknown potential (van de Vrande et al., 2009).

Weighing ECV modes against internal corporate venturing, ECV is described as preferable when the corporate strives for quick financial returns, while internal corporate venturing is preferable when the corporate aims for organizational development and cultural change (Miles & Covin, 2002). Contrasting Miles and Covin's (2002) observations, the review indicated that early-stage ECV vehicles, such as CAs, are not inferior to internal corporate venturing for strategic innovation purposes. First, corporates often pursue strategic motives when engaging in CA (Hutter et al., 2021; Kohler, 2016; Nesner et al., 2020) as well as with other ECV vehicles (e.g., Howell, 2022; Hughes et al., 2007; Kruft & Kock, 2019; Pe-Than et al., 2019). Second,

the literature describes the impact of ECV engagement on organizational factors (e.g., climate, employee work satisfaction, and learning; Bouncken et al., 2020a; Pe-Than et al., 2022; Urbaniec & Żur, 2020; Wikham & Styhre, 2017).

When comparing the corporates' motives to employ a particular ECV vehicle, mostly strategic and some financial motives are identified. Concerning corporate motives, CAs do not differ significantly from the other ECV vehicles. The core strategic motive across all vehicles is the monitoring and identification of innovations (Becker & Gassmann, 2006a; Howell, 2022; Kanbach & Stubner, 2016; Nagy & Lindsay, 2018; Pe-Than et al., 2019; Urbaniec & Żur, 2020). Thereby, the concreteness of the expected innovation outcome ranges from an open-ended exchange between corporate employees and startups in CWS to the identification of startup products generating new revenue streams or becoming part of the corporate value chain (Becker & Gassmann, 2006a; Nagy & Lindsay, 2018). While also serving as a "listening post" to monitor the environment, CAs rather focus on the materialization of identified innovations into collaboration projects and/or organizational integration (Kanbach & Stubner, 2016; Nesner et al., 2020; Shankar & Shepherd, 2019; Urbaniec & Żur, 2020). Additionally, cultural rejuvenation is a relevant strategic motive across all vehicles (Hutter et al., 2021; Kohler, 2016; Pe-Than et al., 2019). Hackathons and CWS bring together individual corporate employees or departments with entrepreneurial individuals or startups, and additional motives include employee learning, development of corporate employees' way of working, or job satisfaction (Howell, 2022; Nagy & Lindsay, 2018; Pe-Than et al., 2019; Spreitzer & Lyndon, 2015). The literature on CI also emphasizes additional organizational motives such as the development of external networks in the startup ecosystem (Hughes et al., 2007; Kruft, 2020). Furthermore, financial motives are only relevant for CAs taking equity in the startups to gain financial returns from the accelerated, high-growth ventures (Shankar & Shepherd, 2019).

Mechanisms: participant treatment and success factors. Studies attributed to the category "mechanisms" either focus on the participants' treatment within the vehicles (e.g., interaction in hackathon challenges, CWS tenancy, incubation process, or acceleration process) or elaborate on challenges and success factors for the setup and operation of the single ECV vehicles. Across ECV vehicles, in the establishment phase, the definition of interaction mechanisms with the corporate organization is crucial. While the literature does not suggest that there are major differences in the establishment process and required integration or governance structures, articles solely elaborate on the establishment of corporate-internal ECV units as compared to services of external ECV vehicles. CWS literature suggests that the successful implementation of a new ECV unit requires strong senior management support, positive communication, and signaling of structural rejuvenation towards the organization (Wikham & Styhre, 2017).

Different design suggestions for a governance structure as well as operational integration between the corporate parent and ECV vehicles are provided. Committees or advisory boards are required to supervise the startup activities and should thereby be carefully designed in terms of board composition, orientation, and decision processes (Chen & Kannan-Narasimhan, 2015; Robeson & O'Connor, 2007). Additionally, contact people from business units can early on link external startups to business units, as partners for joint projects or target units for a subsequent startup integration (Becker & Gassmann, 2006b). Overall, the review showed that while we have first insights about the establishment process and governance of corporate-operated or internal ECV vehicles, we have no understanding of how externally operated ECV vehicles are integrated into and governed by the corporate organization (e.g., initial establishment and operating model, reporting and performance management, termination of collaboration). Additionally, there is a limited understanding of the relationship between ECV vehicles and corporates, which determines the success of initiated corporate-startup

collaborations, as explained in Section 2.3 on boundary spanning units and organizations (Bergman & McMullen, 2021).

When focusing on the different vehicles' participant services and treatment processes, design and conceptual differences between the vehicles become apparent. Generally, corporates require competencies in the selection or discovery of startups, incubation, and acceleration of suitable startups (O'Connor & DeMartino, 2006). While the conscious decision on preferred participant groups is relevant for CWS and hackathons mainly in the design phase, the relevance of ongoing discovery and careful selection of startups to participate in the programs are particularly emphasized in CI as well as CA literature (Feldmann & Teuteberg, 2021; Nagy & Lindsay, 2018; Shankar & Shepherd, 2019). CI and CA participant startups need to match the corporate's strategic goals and need to prove they have a developed business plan viability and a high growth potential (Becker & Gassmann, 2006b; Shankar & Shepherd, 2019). The CA literature indicates that the matchmaking process is also adjusted to the corporate goal, often following a stage-gated structure and involving different stakeholders from the corporate organization (Shankar & Shepherd, 2019). When selecting startups for CIs, corporates are recommended to employ a balanced set of screening and selection criteria around the startup's market, management, and financials (Aerts et al., 2007), which is likely comparable for CAs. Entrepreneurs select CIs based on their resource preferences and focus on the corporate's associated legitimacy, their access to global resources, exit opportunities, or the CIs' network (van Weele et al., 2020). While we have first insights, especially from CI literature, we lack a comprehensive understanding of ECVs' and particularly CAs' startup matchmaking processes (Cohen et al., 2019b). Considering the relevance of startup sourcing and selection for CA success (Hallen et al., 2020), developing this understanding is crucial. More specifically, we do not know how CAs address corporates' needs and strategies in the matchmaking process.

The discussions about the actual treatment process differ between the literature streams; hackathon literature focuses on team composition and dynamics, CWS literature focuses on the created community, and CI, as well as CA literature, elaborates on the different services provided. Hackathon literature distinguishes between different types of teams to elaborate on coordination mechanisms, team (multicultural) competencies, and team performance (Lu et al., 2022; Pe-Than et al., 2022). Nascent CWS literature elaborates on the community naturally emerging in the shared workspace without a strong moderation or a programmatic framework, showing that participants' endorsement of a shared vision as well as passive and active sustainment of community norms and commonalities contribute to community creation (Garrett et al., 2017).

In contrast, CI literature elaborates on the comparably more extensive services provided to participant startups to foster their success (Bruneel et al., 2012). In addition to access to the corporate's network within and outside its organization that provides startups with technology, commercial market, and management knowledge, CIs offer business development assistance, administrative support, and further high-value services (Allen & McCluskey, 1991; Barbero et al., 2014; Becker & Gassmann, 2006b; Block et al., 2018; Bøllingtoft & Ulhøi, 2005; Grimaldi & Grandi, 2005). While also offering corporate resource access throughout the acceleration process, CAs involve the corporate organization differently than CIs due to the different service offerings. For example, as mentorship and training are standard components of CAs' service offerings, corporate units and executives can be involved in these formats (Hutter et al., 2021; Moschner et al., 2019; Shankar & Shepherd, 2019). Furthermore, the demo day at the end of the CA program offers the opportunity to involve the broader corporate organization as well as external stakeholders from the corporate network (Richter et al., 2018; Shankar & Shepherd, 2019). Whereas the examples show that CAs act as a bridge connecting startups with the stakeholders and resources in the corporate organization (Amezcua et al., 2013), it remains

unclear which mechanisms CAs employ and which relationships they build to enact this bridging role (Bergman & McMullen, 2021).

The transition of the startup into the corporate organization is mainly discussed in CI but is also touched on in hackathon literature since both vehicles are more targeted at the development of concrete innovation projects than often more open-ended CWS (Bouncken & Reuschl, 2018; Howell, 2022; Nagy & Lindsay, 2018; Spreitzer & Lyndon, 2015). Generally, the fit of the innovation to the corporate organization as well as the ability to find a home within the corporate (e.g., a suitable and open business unit) determine integration success. Additionally, a smooth transition enabled by the corporate's inventor network clustering and social capital facilitates the absorption process (Kim et al., 2021). Only CI literature addresses the timing of the transition and suggests that the transition can be initiated at different stages throughout the incubation process—early on through co-investment and co-incubation of business units or at late stages when the financial viability of a project is comparably certain (Chen & Kannan-Narasimhan, 2015). A successful transition structure includes a preparation phase with a dedicated transition team, training, and personnel transfer to foster a mutual understanding between the business unit and startup and the installment of champions to accompany the transition. After the transition, a certain degree of startup autonomy as well as a performance management system adjusted to a startup's risk structure contribute to the operational success (van Burg et al., 2012). While the insights from CI literature are likely applicable to CAs aiming to foster strategic collaboration with or integration of the startups into the corporate organization (Shankar & Shepherd, 2019), CA literature does not address the topic of transition specifically. Since CA startups tend to be in a later stage than CI startups (Bergman & McMullen, 2021), a subsequent collaboration or integration of the more stable product and the company is likely easier.

Corporate as organizer or sponsor

Motive	Impact
• Innovation	n/a
• Break silos	
• New social connections	
• Develop company culture	
• Employee learning & skill development	

HACKATHON

Motive	Impact
• Fun	• Skill development
• Learning	• Confidence in learning
• Monetary price or social recognition	• Network
• Network	

Motive	Impact

Mixed project teams corporate teams

Corporate as (co)-operator or user

Motive	Impact
• Innovation (task-oriented & open-ended)	• Org. learning re. resource translation
• Employee job satisfaction	• Increase exploitative orientation
• Change way of working	• Open & dynamic climate
• Cost saving	• Reputation

CO-WORKING SPACE

Motive	Impact
• Special flexibility	• Learning
• Networking & relationships	• Identification of solutions
• Knowledge exchange	• Energy/ motivation
	• Efficiency
	• Flexibility
	• Legitimacy
	• Work satisfaction

Motive	Impact

Entrepreneurs/startups Freelancers

Corporate as operator or sponsor

Motive	Impact
• New products & services	• Sales growth
• New tech to integrated	• New products
• Complementary tech	• Patents
• Cultural change	• Organizational innovation
• External ecosystems & networks	

INCUBATOR

Motive	Impact
n/a	• Improved chances for VC funding

Motive	Impact

Startups in pre-venture/infancy stage

Regional economy: sales growth, new product launches, patent generation, poverty alleviation

Corporate as operator or sponsor

Motive	Impact
• Monitor innovations	• Market knowledge
• New tech to integrated	• Employee learning
• Cultural change	• Organizational learning
• Entrepreneurial talent	• Network
• Equity stakes in high growth ventures	• Reputation

ACCELERATOR

Motive	Impact
n/a	• Startup valuation

Motive	Impact

Startups in infancy/early growth stage

CORPORATE VENTURE CAPITAL, M&A

Figure 3: ECV Vehicles According to Participant Startup Maturity

Outcomes. Only a few studies quantify the outcomes of an ECV engagement for corporate sponsors as well as participant individuals or startups. Especially for the more nascent vehicles—hackathons, CWS, and CAs—only descriptive evidence for the treatment effects is available (see Figure 3). The fragmented insights do not allow for a comprehensive assessment of CA treatment effects in comparison to other ECV vehicles. The parent corporate innovation performance measured by the number of filed patent applications is positively influenced through the engagement in ECV (Barbero et al., 2012; Keil et al., 2008), reaffirming that ECV contributes to reaching corporate innovation as its main goal. The literature shows that especially more loosely coupled ECV vehicles, such as CAs, foster radical or breakthrough innovation (van de Vrande et al., 2011). While the evidence is qualitative, the innovation process employed in hackathons in contrast leads to the prioritization of value creation over the novelty of the developed solutions, indicating that the format leads to incremental rather than radical innovation (Ghosh & Wu, 2021). As a precondition for successful innovation, CAs offer corporates access to market knowledge including trends, technology innovations, competition, and customer expectations (Urbaniec & Żur, 2020). CIs are the only vehicle for which the literature identifies measurable returns for their parent corporate in the form of new products and sales growth (Barbero et al., 2012). CI research further elaborates on the type of innovation fostered, showing that CIs contribute to innovations in organizational processes (e.g., opening new markets or positioning in a new sector) or technological processes, but not necessarily to product innovations (e.g., new equipment, tools, and methods in the production process; Barbero et al., 2014).

ECV establishment or sponsorship additionally leads to organizational and employee learning and enhances the parent corporate's dynamic capabilities, including its ability to sense and seize opportunities (Enkel & Sagmeister, 2020). Participation in CWS additionally fuels the corporate

employees' capability to translate available resources into new domains (Wikham & Styhre, 2017). Moreover, CA involvement leads to the development of expert skills among corporate employees related to the management of startup collaborations and a more pragmatic attitude towards failure (e.g., evaluating new ideas and effective innovation project management; Urbaniec & Żur, 2020). Organizational capabilities to learn from startup collaboration are built through acquisitive learning, or imitation, in the early phases (Keil, 2004). Complementary learning and learning by doing support the adaptation of processes and behaviors to individual organizational conditions (Keil, 2004). Non-equity, hence lower risk ECV modes, also contribute to the transfer of distant technological knowledge from the startup to the corporate through explorative learning (Schildt et al., 2005). Additional organizational factors such as the open and dynamic climate as well as a better organizational image and identity fueled through CWS or CA are even described as more relevant than the economic value creation effects (Urbaniec & Żur, 2020; Wikham & Styhre, 2017).

Concerning the outcomes for the participating individuals or startups, the literature only offers selective evidence. Regarding the performance benefits of EVC participation, the literature describes that CI participation fuels startups' acquisition of government grants and VC funding (Woolley & MacGregor, 2021). CA programs in contrast do not increase the startups' funding amount; instead, they only impact the valuation of the startups (Cohen et al., 2019b). The benefits of a hackathon and CWS participation are linked to individual learning, productivity, and satisfaction. In hackathons, corporate employees develop skills and confidence in their learning capabilities and CWSs' open institutional environment and non-hierarchical structures likely positively influence individual learning (Bouncken & Reuschl, 2018; Pe-Than et al., 2022). Additionally, participation in a CWS positively influences corporate employees' work satisfaction,

with the community contributing to the creation of energy, motivation, and social support (Bouncken et al., 2020a; Howell, 2022).

2.3. Bridging Boundaries Between Asymmetric Organizations

To understand whether and how accelerators can initiate collaborations by creating "bridge[s] between divergent worlds" (O'Mahony & Bechky, 2008, p. 426)—namely small new startups and established corporates—the literature streams on boundary spanning and boundary organizations offer two complementary theoretical perspectives (compare Table 9). The literature streams study how individuals (Birkinshaw et al., 2017; Tushman, 1977), teams (Marrone, 2010), organizational units (Aldrich & Herker, 1977; Klueter & Monteiro, 2017; Monteiro & Birkinshaw, 2017), or entire organizations (Guston, 1999; O'Mahony & Bechky, 2008) positively impact relationships and thereby facilitate collaboration (Huang et al., 2016; Lopez-Vega et al., 2016; Tushman, 1977).

Table 9: Overview Boundary Spanning and Boundary Organization Literature

Level in Organization	Studies	Focus Elements/Mechanisms
Boundary organizations		
Between external organizations	O'Mahony and Bechky (2008)	Organizing practices to ameliorate differences between parties while preserving individual interests: governance, membership, ownership, control of production
	Perkmann and Schildt (2015)	Mechanisms enabled by boundary organization: mediated revealing (of previously anonymized information), enabling multiple goals
	Guston (1999)	Boundary organization role: creator of combined social order between two stakeholder groups, agent for stakeholders on both sides of boundary
Between internal units	Yeow et al. (2018)	Boundary organizational practices as rules and arrangements for stakeholder collaboration along three phases of project implementation: organizing to negotiate, to contain, and to sustain
Boudary spanning		
	Obstfeld, Borgatti, & Davis (2003); Vries et al. (2014)	Antecedents/contingencies: knowledge, motivation

Intra-organizational (individual boundary spanners)	Huang et al. (2016)	Antecedents/contingencies: personnel ties on higher level (top management), personal ties on lower level (employees)
Intra- and inter-organizational (individual boundary spanners)	Colman and Rouzies (2019)	Antecedents/contingencies: constructive intraorganizational relationships, cooperative interorganizational relationships
Intraorganizational (boundary spanning unit)	Monteiro and Birkinshaw (2017)	Contingencies: lack of common ground, uncertainty about mediation opportunity
		Antecedents: cognitive, structural, relational capital
	Aldrich and Herker (1977)	Mechanisms: information processing, external representation
Intra- and inter-organizational (individual boundary spanners)	Colman and Rouzies (2019)	Mechanisms: promoting, mobilizing (intraorganizational), bridging (interorganizational), mitigating conflicts
Intraorganizational (boundary spanning unit)	Monteiro and Birkinshaw (2017)	Processes: translating, transforming, matchmaking

2.3.1. Boundaries Characterizing Asymmetric Organizations

Boundaries are demarcation lines for areas such as knowledge or tasks as well as disciplines, occupations, or organizations (Aldrich & Herker, 1977; Carlile, 2002; Ferlie, Fitzgerald, Wood, & Hawkins, 2005). Some types of boundaries inhibit actors from executing tasks such as knowledge sharing or coordination (Bechky, 2003; Pawlowski & Robey, 2004). Hence in the context of this thesis boundaries inhibit the accelerator from coordinating the matching processes between corporate sponsors and applicant startups.

Organizational boundaries. Studies on inter-organizational collaboration often distinguish organizational boundaries as demarcation lines between an organization and its task environment (Santos & Eisenhardt, 2005)—external boundaries—as well as boundaries between different units or teams within one organization—internal boundaries (Aldrich & Herker, 1977; Birkinshaw et al., 2017; Colman & Rouzies, 2019; Dahlander, O'Mahony, & Gann, 2016). In the context of my research, external boundaries are in place between corporates and startups, as different

organizational types and internal boundaries exist mainly between units within the corporate sponsor organizations.

Neither external nor internal boundaries are easy to overcome. Relevant stakeholders—namely corporates and startups—may not know each other, may be unable to communicate effectively due to interpretative boundaries, or may have difficulties aligning their interests because of political boundaries (Carlile, 2004; O'Mahony & Bechky, 2008). Syntactic boundaries describe collaboration difficulties that arise due to differences in codes, routines, or applied protocols (Carlile, 2004). They are overcome by a simple transfer of knowledge using a common lexicon or standard operating procedures for the collaboration (e.g., repositories, specifications, and standards; Carlile, 2004; Grant, 1996; Kellogg, Orlikowski, & Yates, 2006; Nelson, 1985).

Semantic or interpretative boundaries arise if stakeholders from different communities, occupations, or contexts—for example, corporates and startups as different organizational types— try to collaborate. The stakeholders' different tacit knowledge bases, shaped by context, values, and norms, lead to different assumptions or interpretations of meaning (Carlile, 2004; Kellogg et al., 2006). Translation or the establishment of a shared language as well as common boundary objects help to surpass the interpretative differences (Bechky, 2003; Kellogg et al., 2006). The literature on the search for external knowledge as a source for innovation particularly emphasizes interpretative boundaries characterized by the distance of the actors' knowledge base in categories represented by technological domains (e.g., artificial intelligence, robotics), industries (e.g., automobile, consumer retail), or scientific fields (Lopez-Vega et al., 2016). Searching for solutions that are distant from an organization's current knowledge base (Fleming & Sorenson, 2004; Rosenkopf & Nerkar, 2001) is essential for a firm's innovative capabilities (Carnabuci & Operti, 2013), but this quest may also require boundary spanning (Lopez-Vega et al., 2016; Rosenkopf

& Nerkar, 2001). To span technological or industry boundaries, an understanding of the underlying search space is essential (Fleming & Sorenson, 2004).

Finally, pragmatic and political boundaries are in place if the actors have different interests. To resolve the different interests, a transformation process or negotiations needs to occur so that the actors can align and produce new joint knowledge or interests (Carlile, 2004). Common maps, models, or boundary objects that represent differences and dependencies support the transformation process to create a common ground (Bechky, 2003; Carlile, 2004).

Boundaries between asymmetric organizations. Studies on boundary spanning or boundary organizations often investigate the initiation of collaborations between asymmetric organizations separated by multiple boundaries. Asymmetry structurally manifests in size, scale, age, and/or resource base (Buckley & Prashantham, 2016; Kalaignanam et al., 2007). For instance, the initiation of collaborations between asymmetric organizations was studied in the context of technology scouting units spanning the boundaries between corporates and startups (Klueter & Monteiro, 2017; Monteiro & Birkinshaw, 2017) or boundary organizations enabling collaboration between open source communities and corporates (O'Mahony & Bechky, 2008). In another study boundary spanning was investigated in the context of an acquisition, where asymmetric hierarchical relationships between the acquired and acquiring company were relevant (Colman & Rouzies, 2019). Asymmetric stakeholders face differences in organizational practices (O'Mahony & Bechky, 2008; Perkmann & Schildt, 2015), assumptions, and beliefs (Birkinshaw et al., 2017), constituting semantic or interpretative boundaries that are presumably more difficult to overcome than boundaries between more similar or symmetric organizations. Differences in interests, goals (O'Mahony & Bechky, 2008; Perkmann & Schildt, 2015), or hierarchical authority (Birkinshaw et al., 2017; Colman & Rouzies, 2019) constitute presumably high political

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boundaries. Therefore, the differences between asymmetric organizations are likely to complicate the boundary spanning process.

Startups and corporates possess asymmetric organizational attributes in size, scale, and resource base (Buckley & Prashantham, 2016), which leads to stark differences along additional dimensions (see Table 10). For example, startups are more innovative often pursuing radical innovations (Buckley & Prashantham, 2016; Kalaignanam et al., 2007; Yang et al., 2014) and are more flexible to pursue new opportunities, while corporates tend to lose flexibility throughout the growth process (e.g., establishing structures, processes, governance mechanisms; Kuemmerle, 2006). In contrast, startups are thwarted by their lack of legitimacy (Zimmerman & Zeitz, 2002), which they aim to gain from relationships with legitimate, reputable corporates (Knoben & Bakker, 2019). Furthermore, corporates typically possess the resources, especially capital, and knowledge that startups need. The need to access these resources quickly may lead the startup to accept unfavorable conditions to speed up the negotiation process (Haeussler, Patzelt, & Zahra, 2012; Rothaermel, 2001). When collaborating with resource-rich corporates, the startups' lack of temporal and legal resources can hamper their ability to defend themselves, leaving them vulnerable to potential misappropriation by the corporate partner (Hallen, Katila, & Rosenberger, 2014; Katila et al., 2008). Such differences are likely to impact the semantic and political boundaries corporates and startups face when seeking collaboration.

Table 10: Asymmetries Between Corporates and Startups with Associated Boundaries

Organizational Asymmetries		
Asymmetric organizational attributes		**Boundary likely impacted**
Size, scale, and resource base	Startups are small, local, and resource-poor companies	n/a
	Corporates are comparably large, global, and resource-rich organizations with relative advantages over entrants (Buckley & Prashantham, 2016; Kalaignanam et al., 2007; Yang et al., 2014)	
Age/maturity	Startups are newly founded organizations and face respective challenges limiting their viability	n/a
	Corporates are mature organizations (Stinchcombe, 1965)	

Exemplary Differences Associated with Organizational Asymmetries		
Differences associated with asymmetries		**Boundary likely impacted**
Innovativeness	Different entrepreneurial foci on exploration and exploitation:	Semantic boundaries Political boundaries
	Startups are focused on the exploration of opportunities in new markets (Kirzner, 1973), more diverse technological domains favoring radical innovations (Rosenkopf and Nerkar 2001, Shane 2001, Kneeland et al. 2020)	
	Corporates are focused on strengthening their position in extant markets (Kirzner, 1973)	
Flexibility and agility	Startups are more flexible and can seek new openings due to their smallness (and often newness)	Syntactic boundaries Political boundaries
	Corporates lose flexibility and agility with growth (Kuemmerle, 2006)	
Legitimacy	Startups lack legitimacy due to their newness (Zimmerman & Zeitz, 2002)	Political boundaries
	Corporates typically possess a higher legitimacy or social status (Buckley & Casson, 1998).	
Bargaining power	Startups' need to access corporate resources quickly, potentially leading to unfavorable negotiation results in the initiation of alliances (Haeussler et al., 2012)	Political boundaries
Availability of defense mechanisms	Startups' lack of resources (especially time and legal) hampers their ability to defend themselves against potential misappropriation when collaborating with resource-rich corporates (Hallen et al., 2014; Katila et al., 2008)	Political boundaries

Whereas the examples show that we have insights about the asymmetries between corporates and startups as well as the differences associated with these asymmetries, we lack a comprehensive understanding of the boundaries prevalent between the organizations—especially when initiating collaborations. To my knowledge, the concept of organizational asymmetries (i.e., differences in organizational attributes) has not yet been explicitly connected to the concept of organizational boundaries (i.e., demarcation lines for areas such as knowledge or tasks as well as disciplines, occupations, or organizations). Literature on organizational boundaries characterizes differences on the syntactic, semantic, and political levels and outlines approaches to overcome these differences (e.g., Carlile, 2004). While understanding these boundaries is important for CAs' matchmaking process, the insights are likely transferrable to collaboration-initiation phases of ECV vehicles more broadly as well as other corporate-startup collaboration models (e.g., direct collaboration).

In sum, research has shown that asymmetries between organizations—in the case of this thesis corporates and startups that are asymmetric in size, scale, resource base, and age (Buckley & Prashantham, 2016; Kalaignanam et al., 2007; Yang et al., 2014)—and the associated challenges complicate the collaboration. However, we do not know which boundaries are associated with the asymmetries especially in the initiation phase of collaborations despite the importance of overcoming these boundaries to realize collaborations.

2.3.2. Boundary Organizations

To overcome boundaries and enable effective collaboration between asymmetric organizations, dedicated boundary organizations (i.e., the accelerator) are created in addition to existing entities and establish bridging structures and procedures (Guston, 1999; O'Mahony & Bechky, 2008;

Perkmann & Schildt, 2015). The raison d'être of boundary organizations is to create organizational structures and procedures that "build a bridge between divergent worlds" (O'Mahony & Bechky, 2008, p. 426) but keep organizational boundaries and identities intact (O'Mahony & Bechky, 2008; Perkmann & Schildt, 2015). Structures and procedures are designed to engage participating organizations (i.e., corporates and startups) based on their convergent interests, while simultaneously serving their divergent interests or goals (O'Mahony and Bechky 2008; Perkmann and Schildt 2015). For this purpose, the complementary organizations have the mandate and resources from as well as accountability towards the participating organizations (Guston, 1999; Guston, 2001; O'Mahony & Bechky, 2008; Perkmann & Schildt, 2015). The literature focuses mainly on design elements of stable boundary organizations (see Table 11; Guston, 1999; O'Mahony & Bechky, 2008; Yeow et al., 2018). This literature describes boundary organizations in the context of long-term collaborations between open-source communities and corporations (O'Mahony & Bechky, 2008), long-term open data sponsorships between firms and universities (Perkmann & Schildt, 2015), a stable technology transfer office managing boundaries between the government and the scientific community (Guston, 1999), and even internal units managing a multi-year enterprise integration between diverse organizational subunits (Yeow et al., 2018).

Table 11: Boundary Organization Elements and Practices

Organizational Level	Studies (exemplary)	Focus Elements or Mechanisms
Between external organizations	O'Mahony and Bechky (2008)	Organizing practices to ameliorate differences between parties while preserving individual interests: governance, membership, ownership, control of production
	Perkmann and Schildt (2015)	Mechanisms enabled by boundary organization: mediated revealing (of previously anonymized information), enabling multiple goals
	Guston (1999)	Boundary organization role: creator of combined social order between two stakeholder groups, agent for participant organizations on both sides of the boundary
Between internal units	Yeow et al. (2018)	Boundary organizational practices as rules and arrangements for participant organizational

So far, research builds on two assumptions regarding the connection between the supplemental boundary organization and the organizations on both sides of the boundaries. First, as the examples illustrate, the literature assumes that boundary organizations, as an "enduring organizational bridge" (O'Mahony & Bechky, 2008, p. 454), uphold stable relationships over time with at least one participating organization (Guston, 1999; Yeow et al., 2018) or even two stable counterparts (O'Mahony & Bechky, 2008; Perkmann & Schildt, 2015). Second, while suggesting that supplemental boundary organizations (Guston, 1999) create structures and processes spanning two external boundaries, the literature studies organizations that are affiliated with one of the participating organizations. The affiliation hereby manifests in the boundary organization being managed and/or funded by one participating organization (Guston, 1999; O'Mahony & Bechky, 2008; Perkmann & Schildt, 2015). For example, Gustons (1999) technology transfer office was established and run by a university institute, and O'Mahony and Bechkys (2008) boundary organization was founded by the open source communities and managed by their members. Therefore, the boundary organization's structures and processes are well-adjusted to the interests and organizational practices of the particular participating organizations (O'Mahony & Bechky, 2008; Perkmann & Schildt, 2015). Hence, by design, they mainly span one stable internal boundary to the founding and one external boundary to the non-founding organization.

In sum, complementary, affiliated boundary organizations are known to build organizational structures and processes to overcome divergent interests and enable effective collaboration. However, an understanding is lacking as to whether external boundary organizations can be created to enable collaboration between changing participant organizations, in this context changing

corporate sponsors and applicant startups, on both sides of the boundary and how boundary organizations can dynamically account for their diverse needs.

2.3.3. Boundary Spanning Mechanisms

While the literature on boundary organizations focuses on the structural aspects, boundary spanning literature outlines concrete mechanisms employed by "a specialized entity that mediates the flow of information between relevant actors in the focal organization and the task environment" (Monteiro & Birkinshaw, 2017, p. 344) as described in Table 12. Boundary spanners assume the role of a mediator between different organizations (i.e., corporates and startups) or stakeholders within one organization (i.e., corporate units; Tushman & Scanlan, 1981) and employ a set of mechanisms falling into one of two categories: information processing or external representation (Aldrich & Herker, 1977; Huang et al., 2016).

Information processing mechanisms entail the sharing of knowledge and information (Colman & Rouzies, 2019; Monteiro & Birkinshaw, 2017; Roberts & Beamish, 2017). Information can be simply transferred or channeled, or it may need to be translated to surpass interpretative boundaries, suggesting an ambiguity in meaning or that a more complex transformation process needs to occur to integrate interests across political boundaries (Carlile, 2004; Monteiro & Birkinshaw, 2017).

Mechanisms falling into the realm of external representation include activities to establish initial connections (Birkinshaw et al., 2017; Colman & Rouzies, 2019; Monteiro & Birkinshaw, 2017), to overcome differences in terms of viewpoints and misconceptions (Birkinshaw et al., 2017), and to mitigate conflicts (Colman & Rouzies, 2019). Conditions for effective boundary spanning are the boundary spanner's specific knowledge and motivation (Obstfeld, Borgatti, & Davis; Reagans & McEvily, 2003; Vries et al., 2014), but also it's relationships and social capital with the participant organizations on both sides of the boundary, which enables and legitimizes the activity

(Colman & Rouzies, 2019; Huang et al., 2016; Jourdan & Kivleniece, 2017; Kislov et al., 2017; Monteiro & Birkinshaw, 2017).

Table 12: Boundary Spanning Contingencies/Antecedents and Mechanisms

Organizational Level	Studies (exemplary)	Boundary Spanning Antecedents and Mechanisms
Antecedents or contingencies		
Intra-organizational (individual boundary spanners)	Obstfeld et al. (2014), Reagans and McEvily (2003), Vries et al. (2014)	Knowledge (functional expertise), motivation (orientation towards joining people, i.e., tertius iungens orientation)
Intra-organizational (individual boundary spanners)	Huang et al. (2016)	Personal ties on a higher level (top management), personal ties on a lower level (employees)
Intra- and inter-organizational (individual boundary spanners)	Colman and Rouzies (2019)	Constructive intra-organizational relationships, cooperative inter-organizational relationships
Intra-organizational (boundary spanning unit)	Monteiro and Birkinshaw (2017)	Contingencies: lack of common ground, uncertainty about mediation opportunity Antecedents: cognitive, structural, relational capital
Boundary spanning mechanisms		
Intra-organizational (individual boundary spanners)	Aldrich and Herker (1977)	Mechanism categories: information processing (e.g., communication, knowledge sharing), external representation (e.g., conflict resolution, cooperation)
Intra- and inter-organizational (individual boundary spanners)	Colman and Rouzies (2019)	Mechanisms: promoting, mobilizing (intra-organizational), bridging (inter-organizational), mitigating conflicts
Intra-organizational (boundary spanning unit)	Monteiro and Birkinshaw (2017)	Processes: translating, transforming, matchmaking

Previous studies have mainly assumed that boundary spanners work on a specific task (e.g., finding one startup for a specific problem; Monteiro & Birkinshaw, 2017). Thus, boundary spanners can react to the specific task and employ a single or a set of combined mechanisms rather than planning a more complex or standardized process to systematically span boundaries. Additionally, boundary spanning literature, similar to boundary organization literature, mainly assumes that boundary spanners are internal to one organization (e.g., Aldrich & Herker, 1977; Colman & Rouzies, 2019;

Monteiro & Birkinshaw, 2017). One recent exemption to that assumption is the study by Lopez-Vega, Tell, and Vanhaverbeke (2016) who discuss how a third-party service provider, as the platform accelerator in this study, can span boundaries between one knowledge-seeking firm and one group of potential solution providers to solve a specific technology problem. Consequently, the study focuses on boundary spanning in the context of individualized project work.

In sum, research shows that boundary spanners given certain conditions (e.g., knowledge, motivation, relationships, social capital) employ a set of mechanisms to effectively surpass boundaries between units or organizations. However, our understanding of how external boundary spanners can provide boundary spanning services systematically and therefore manage diverse complex tasks simultaneously is still limited.

2.4.   Restatement of the Research Gap

The literature review shows the importance of ECV vehicles' ability to span boundaries between asymmetric corporates and startups, especially in the initiation phase of potential collaborations. Corporate internal or sponsored programs are a crucial gateway to managing the initial matchmaking or sourcing and selection (i.e., initiating a potential collaboration) between corporates and early-stage startups. Thereby the careful participant curation that considers corporate strategic goals and ECV vehicle preferences—particularly for accelerators as a distinct ECV vehicle—is important. I showed that the matchmaking or sourcing and selection process as well as related bridging or curating mechanisms are schematically introduced in the literature. However, a comprehensive understanding is missing of how strategically compatible corporates and early-stage startups are matched (i.e., process view). Furthermore, the literature on boundary spanning and boundary organizations shows that asymmetric corporates and startups are separated by diverse boundaries that need to be surpassed to identify matches and connect the parties for

subsequent collaborations. While the literature suggests how boundary organizations affiliated with an actor on one side of the boundary provide structures and processes to span boundaries and how boundary spanning mechanisms are employed to bring organizations together, we lack an integrating view of boundary spanning structures, processes, and mechanisms. Additionally, insights are lacking into how external organizations—such as independent platform accelerators—establish these structures and processes to act as matchmakers between changing participant organizations on both sides of the boundary.

The literature review presented in this chapter lays the groundwork for this thesis and justifies further investigation of the following research question: *How does a platform accelerator span organizational boundaries by facilitating matchmaking between multiple corporates and startups before the cohort starts?*

3. Methodology

This chapter describes the longitudinal research approach of this thesis to understand how a PA spans boundaries between multiple changing corporates and startups throughout the dynamic matchmaking process that aims to initiate collaboration projects (Gioia et al., 2013). Section 3.1 provides an overview of the inductive research method followed by a description of the case study design in section 3.2. I provide an overview of the case study sampling and the selected case in Section 3.3, and I describe the data as well as the data collection process in Section 3.4. Section 3.5. outlines my approach to data coding and analysis.

3.1. Inductive Theory Building

The newness and anticipated complexity of the selected phenomenon—a PA acting as a matchmaker—called for an exploratory inductive study (Denzin & Lincoln, 2011; Langley, 1999).

In this study, I followed an interpretative approach and focused on the exploration of phenomena in their natural environment assuming that organizational reality is individually perceived or socially constructed (Berger & Luckmann, 1966; Denzin & Lincoln, 2011; Morgan, 1983; Schutz, 1972; Weick, 1979). Hence, I focused on the study's knowledgeable participants' interpretations and experiences to avoid imposing meaning on their actions and understanding (Gioia et al., 2013). Starting my research project with a broad, open-ended research question on how the PA initiates corporate-startup collaborations throughout the startup matchmaking process, I adjusted the research question throughout the data analysis process. Additionally, I conducted an inductive data analysis allowing theory to emerge from data without priorly immersing myself in the literature (Gioia et al., 2013; Glaser & Strauss, 1999).

Inductive research can yield process or variance models (van de Ven, 2007). Answering "how and why things emerge, develop, grow, or terminate over time" (Langley et al., 2013, p.1) requires an explanation of the sequence of events based on their underlying mechanisms as well as the circumstances and contingencies thereof—hence, the development of a process model (Bruner, 1991; Tsoukas, 1989). Therefore, I selected a longitudinal single case study to develop a theoretical model that depicts the complex social process and develops new frameworks on "how" the process unfolds (Gioia et al., 2013; Siggelkow, 2007; Yin, 2011). While the matchmaking of the PA is described in practice as a process, I understand a process in the context of this work according to van de Ven (1992) as a narrative description of how aspects develop and change.

Analyzing processes requires methods that allow a deep understanding of the subject to be obtained (Dyer & Wilkins, 1991), temporal links between events and patterns to be identified, and different durations of events throughout the process to be addressed (Langley, 1999). Therefore, I collected rich, detailed, and comprehensive qualitative data (Langley, 1999). Throughout the data collection

and analysis process, the research question developed to reflect my evolving understanding of the PA's role as a boundary organization between multiple applicant startups and corporate sponsors on both sides of the boundary (Edmondson & Mcmanus, 2007). Thus, I studied the question: *How does a platform accelerator span organizational boundaries by facilitating matchmaking between multiple corporates and startups before the cohort starts?* To answer this question, I developed a grounded framework depicting the PA's role as a boundary organization as well as its boundary mechanisms employed to initiate collaborations between corporates and startups. This framework explains the outcomes and the context of this temporally evolving, organizational phenomenon (Gioia et al., 2013; Strauss & Corbin, 1990).

3.2.   Case Study Design

According to Yin (2009), case studies have three dimensions: first, the research purpose (explanatory, descriptive, or exploratory), second, the number of cases (single or multiple), and third, the units of analysis (single-holistic or multiple-embedded). Single cases have offered an important methodology to develop theoretical insights into organizational processes (Dyer & Wilkins, 1991; Siggelkow, 2007). They allow researchers to study previously unobservable or rare installations of phenomena over time in great detail, which is hardly possible in multiple case studies (Siggelkow, 2007). Detailed studies yield deeper insights into theoretical constructs and allow the author to provide more persuasive arguments about the underlying temporal relationships (Siggelkow, 2007). Since my goal was to develop an in-depth understanding of how the PA initiates corporate-startup collaborations, I selected a single case study for my research.

When selecting single cases, researchers should focus on cases that are an unusual phenomenon ("extreme"), were previously inaccessible to researchers ("revelatory"), or are observed longitudinally ("longitudinal"; Siggelkow, 2007; Yin, 2011. I sampled a case study following the

example of Gioia's work (e.g., Clark, Gioia, Ketchen, & Thomas, 2010; Corley & Gioia, 2004; Gioia, Price, Hamilton, & Thomas, 2010). I aimed to select a particularly revelatory case offering a novel context and simultaneously sufficient access to ensure data richness, as presented in Section 3.3 (Langley & Abdallah, 2016; Siggelkow, 2007; Yin, 2009).

Scholars have debated the use of case studies, and especially single case studies, to develop robust theory. Criticism focuses on (i) external generalizability, transferability, and relevance of the findings; (ii) the creation of a mere narrative rather than a theory; or (iii) the aggregation of the phenomenon's description to a level that does not allow for a comprehensive understanding of mechanisms and context (Langley & Abdallah, 2016; Yin, 2009). Researchers with a positivist logic additionally argue that multiple cases are preferable to single cases (Eisenhardt, 1991; Yin, 2009). Regarding (i) and (ii), strong practice-based studies are generating new, broadly relevant concepts and understandings (Langley & Abdallah, 2016). The goal of single-case research is not to claim the representativeness of the sample (Siggelkow, 2007), but to show the existence of a phenomenon in one special organization (McKeown, 1999), and offer accounts for causation, clarify theoretical relationships and enable theory construction (Easton, 1998; Hillebrand, Kok, & Biemans, 2001; Platt, 1988). In other words, offer an "analytical generalization to theoretical propositions, based on real-world discovery" (Easton, 1998; Fletcher & Plakoyiannaki, 2011; Hillebrand et al., 2001; Platt, 1988). The criticism of (iii) regarding the phenomenon's description in this dissertation is addressed by providing a detailed description of the accelerator's matchmaking process and the context. To ensure rigorous analysis I followed Gioia et al. (2013) approach to data analysis.

3.3. Sampling and Case

Following a purposeful sampling strategy, I aimed to identify a case that is information rich and appropriately manifests the phenomenon intensely—the initiation of corporate-startup collaborations by the PA (Patton, 1990). To identify such an intensity case (Patton, 1990) which simultaneously grants access to rich longitudinal data on the matchmaking process, I developed insights from 20 initial interviews and informal conversations with experts on accelerators, corporate-startup collaboration, and innovation. Based on the 20 expert interviews and informal conversations, I gathered information on the recent trends and developments of the CA phenomenon as well as the differences between a PA and a general CA. The interviews helped me to identify a PA program that was (i) a standalone organization, (ii) focused on fostering collaboration projects between startups and corporates in each cohort, (iii) sponsored by four–10 corporates at the same time (but changing over the years), and (iv) running the matchmaking to initiate collaboration projects for over 10 cohorts with eight–10 startups each as a stable process.

The objective of the PA. The selected PA was legally independent of the corporate sponsors and operated self-sufficiently with 10 employees and two program managers. While the PA was a standalone organization, it was affiliated with a larger entrepreneurship center integrating several other incubator and accelerator programs. The program was well established in the year 2020, when I conducted my data collection, in the local entrepreneurship ecosystem. The PA operated for over six years, during which it has undergone several strategic re-orientations to adjust to the needs of its participant organizations—corporate sponsors and startups. Initially, the program was established as an external CA program, with initially one corporate sponsor and the objective to prepare startups "together with partners from industry, […] for a first VC round within three months with the help of intensive coaching and mentoring, and strategic cooperations […]" [founding corporate sponsor].

Already in the second cohort, it deviated from working with one core corporate and transformed into a PA program working with multiple corporate sponsors. Additionally, the value propositions towards corporates and startups and respectively the program design was adapted (see Table 13). In the early years, the program focused on creating an initial connection between corporates and startups and offering the startups access to corporate sponsors' resources (e.g., hardware prototypes, data, and Application Programming Interfaces). Throughout the years, the focus shifted towards driving actual collaborations and administrating concrete collaboration projects between corporates and startups (Year 6: "Co-create with the best: Join the leading tech-startup accelerator in Europe!," "collaborate with one of our leading corporate partners to further develop your product or service" [OM, PA website year 6]), instead of creating a comparably loose connection (Year 1: "access to the most successful enterprise partners in your industry," "get in touch with startups that may innovate their business" [OM, PA website year 1]).

Table 13: Development of PA's Value Proposition and Program Design Over the Years

Year	Value Proposition to Startups	Value Proposition to Corporates	PA Program Design and Offering
1	"As a [name PA] startup you get direct access to the most successful enterprise partners in your industry. They help you with mentoring, hardware, development tools, resources, and their network. [name PA] is a way for our enterprise partners to engage with different startups. Often this collaboration is challenging, but we know how to deal with it."	"Through [name PA], enterprises get in touch with startups that may innovate their business. By promoting startups, industry partners get new innovative impulses and promote internally entrepreneurial thinking while simultaneously providing a valuable contribution to society."	**Duration:** 12 weeks **Frequency:** 3 intakes per year **Service offering**: [amount] EUR funding, coaching and mentoring, office space and administrative support, access to a maker space, access to industry partners **Demo day**
2	"During this accelerator program you will have the chance to cooperate with one of our industry partners who can help you develop your business. You will also have access to hardware prototypes, data, and APIs in order to test and further develop your product."	No changes to previous year	**Duration:** 20 weeks **Frequency:** 2 intakes per year **Service offering**: [amount] EUR funding, coaching and mentoring, office space and administrative support, access to a maker space, access to industry partners **Demo day**

3	"We make leading enterprises and startups overcome innovation barriers by realizing mutual business opportunities. [...] During this accelerator program you will have the chance to cooperate with one of our industry partners, who can help you develop your business. You will also have access to hardware prototypes, data, and APIs in order to test and further develop your product."	No changes to previous year	No changes to previous year
4	No changes to previous year	No changes to previous year	No changes to previous year
5	"We offer a unique program to our startups—during the 20-week program, you will get intensive trainings and coaching on all kinds of business topics. You will collaborate with one of our leading corporate partners to further develop your product or service, with a XX EUR project budget."	"We offer corporate partners: early view on latest developments in startup ecosystem, access to most promising tech-startups, fast-tracked co-development of innovative solutions, branding, public relations and marketing."	**Duration:** 20 weeks **Frequency:** 2 intakes per year **Service offering**: coaching and mentoring, [collaboration project] with corporate sponsor, office space and support, access to a maker space, [amount] EUR funding—no equity taken **Demo day**
6	No changes to previous year	No changes to previous year	No changes to previous year

PA program design. At the time of the data collection, the selected 20-week PA program had two components including, first, the PA program to foster the development of participating startups with "mentorship and/or educational components, that culminates in a graduation event" (Cohen et al., 2019b, p. 1784) and, second, a time- and budget-bound collaboration project with one of the PA's corporate sponsors. The PA admitted six–10 startups twice a year, supported them with a small grant, and did not take startup equity in exchange for program participation. The PA program, the first component, was comprised of coaching and mentoring with entrepreneurs, VCs, and industry professionals; training on different business topics; office spaces; and access to a maker space. The second component was a 20-week collaboration project between the startup and one of the corporate sponsors. Throughout the collaboration project, startups worked together with specific units in the corporate organization to test whether the startup's product could be integrated

into the product portfolio, enhance existing products, or support organizational operations at any point along the corporate's value chain. Throughout its six years lifetime, the PA initiated approximately 130 collaboration projects between corporate sponsors and startups. These collaboration projects are ideally the starting point for long-term collaborations, such as buyer-supplier relationships or joint product development projects between corporates and startups. While a subsequent investment in the startup by the corporate sponsor is one potential long-term outcome, fostering financial returns for the corporates is not the PA's pronounced goal.

Involvement of corporate sponsors and startups. Multiple corporates from different industries partnered with the PA at the same time to conduct startup collaboration projects in different technology areas. These corporates sponsored the program.

According to the PA's employees, corporates worked with the PA to conduct collaboration projects with or invest in high-potential startups. The PA had better access to startups in general or high-potential in particular, due to its positioning as an entrepreneurial support organization, its startup-friendly image, and its embeddedness in the local entrepreneurship ecosystem. Moreover, some corporates, according to the PA, lacked internal startup sourcing and selection capabilities and/or resources. Such corporate sponsors committed to two-year contracts with the PA. While the scope of the contract was dependent on the number of technology or startup collaboration areas in which the corporate aimed to identify potential startup partners, it was possible to flexibly pause the contract or adjust its scope. Throughout its lifetime, the PA worked with 13 different corporate sponsors (see Appendix A5). While some corporate sponsors partnered with the PA continuously for several years, others terminated the contract after a short period—in some cases even after one cohort—forcing the PA to engage in continuous sales cycles.

Startups from different industries fitting the pre-defined collaboration areas were selected twice a year to participate in the program. Startups applied for the PA program, according to the PA employees, mainly because of the guaranteed corporate collaboration project opportunities with a startup-friendly selection process and project conditions. The number of startups selected to participate in a cohort depended on four factors: first, an optimal cohort size determined by the resource capacity of the PA (e.g., eight startups in the investigated cohort), second, the optimal number to foster team learning during the program based on the PA's experience, third, the number of collaboration areas per corporate sponsor; and, fourth, the actual fit between corporate partners and startups identified in the search and selection process.

Startup matchmaking process. To identify startups that simultaneously participate in the PA program and collaborate with corporate sponsors, the PA conducted the matchmaking process under investigation (see Figure 4). The stage-gated process was administrated over six months by a dedicated matchmaking team responsible for sourcing and facilitating the selection of suitable startups. The matchmaking team engaged the corporate sponsors throughout the entire process. The process was subdivided into three phases: an initiation phase, the actual matchmaking process, and a period in which the PA phased out. Initiation mainly comprised the initial definition of startup collaboration areas with the corporate sponsors.

Throughout the matchmaking, the PA scouted suitable startups, screened and pre-selected applicants, and organized meetings between corporates and startups as well as selection/decision meetings with the corporate units. The criteria applied by the PA and the corporate sponsors to evaluate and select the startups belonged to the categories of collaboration project fit, timing/fit to the program, performance and potential (e.g., scalability, product novelty, unique selling points, customer traction, team), and perceived motivation and professionality (see Section 4.4, Table 24

for details about criteria). After the startups were selected to participate in the PA program and the corporate collaboration project, the PA managed the contracting and phased out of managing the relationship between the corporates and startups throughout the collaboration project. In my research to map the process, I start with the definition of the startup collaboration areas between corporate sponsors and startups, and I conclude with the PA sending a handover email to the corporate sponsor after signing their participation contracts with the selected startup for the upcoming cohort.
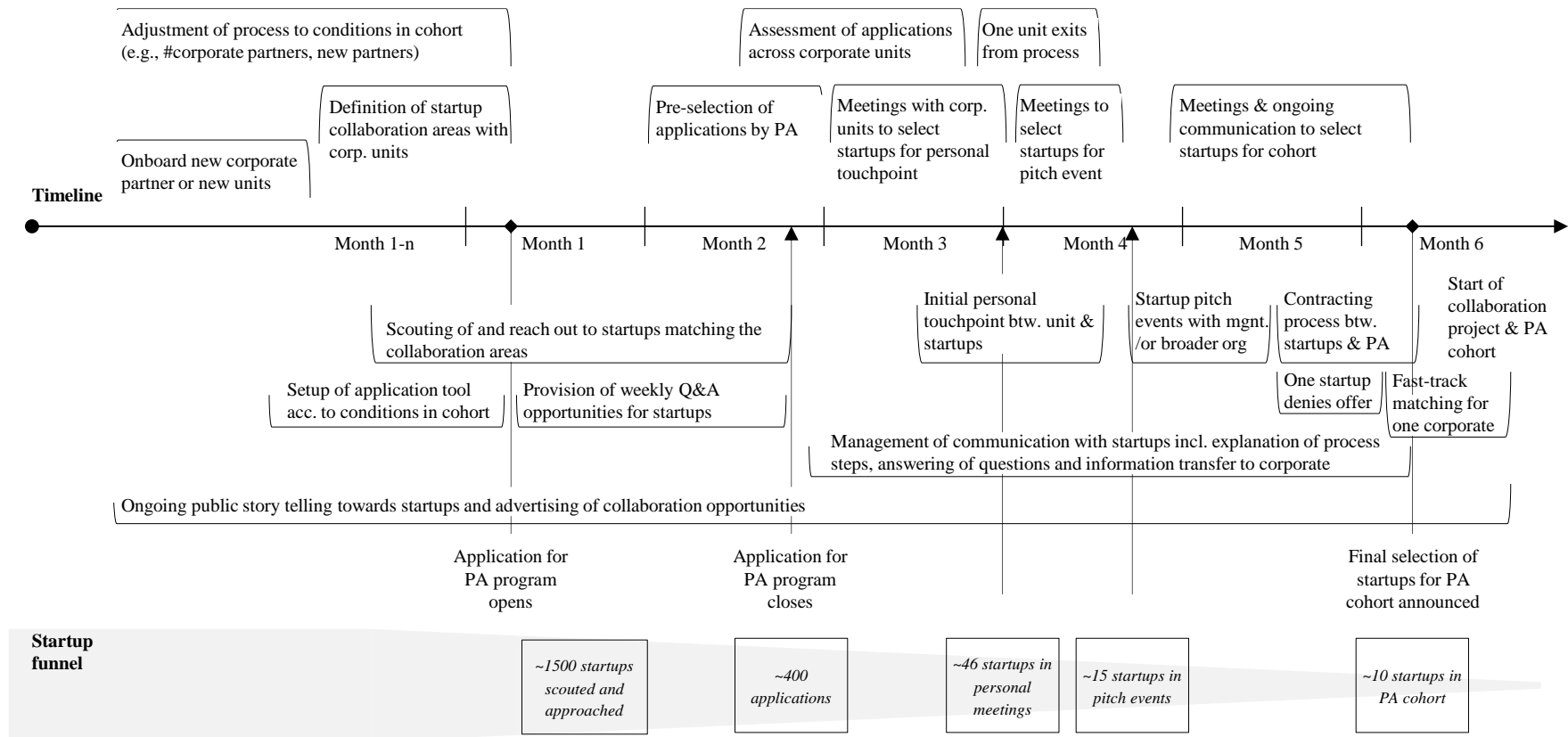
Figure 4: Visual Map of the PA's Startup Matchmaking Process

Cohort investigated in this thesis. When I entered the field, the PA started the matchmaking process for its upcoming cohort together with four corporate sponsors. As in the previous cohorts, there was a change in the composition of corporate sponsors, since one sponsor paused the contract shortly before the start of the cohort. Of the four corporate sponsors that participated in the matchmaking process, three partnered with the PA for more than six cohorts, and one participated in only two previous cohorts. The PA worked with different units within the corporates' organizations, which usually included, first, a coordinating unit overseeing the PA and building the bridge, second, several functional units that conduct the collaboration project with the startups, and third, a sponsoring management level. While this general setup applied to all corporate sponsors, there were major differences across the organizations; for example, the coordinating unit for Corporate 1 was a line unit responsible for sustainability topics, for Corporates 2 and 3 it was an innovation unit, and for Corporate 4 it was the CVC arm.

Startups were scouted in different, mainly technology areas. The collaboration areas were partially proximate to the corporate sponsors' core business areas, adding directly to the product portfolio, and partially distant and rather focused on the improvement of internal processes, for example (see Table 14). Moreover, the breadth of the technology areas ranged from broad business areas with many potential startup partners (e.g., e-mobility) to more niche areas with only a few suitable startups. The observed matchmaking process started with approximately 1,500 scouted startups. Ultimately approximately 10 startups were selected to join the program and conduct a collaboration project with the corporate sponsors.

Table 14: Startup Collaboration Areas in the Investigated Cohort

Corporate Sponsor	Collaboration Area	Details on Collaboration Area: Technology, Industry, and Proximity to Core Business
Corporate 1	Innovative tech process solutions	Technology: different
		Industry: different
		Proximity to core business: technologies used to support core business operations; not core competence
	Sustainable process solutions	Technology: different
		Industry: agriculture
		Proximity to core business: solutions supporting the corporate value chain in integrated down-stream production processes; not core competence
	Sustainable products to enrich portfolio	Technology: non-tech
		Industry: retail
		Proximity to core business: core products
	Sustainable production material	Technology: tech
		Industry: materials production
		Proximity to core business: consumables used during core business activities; not core competence
Corporate 2	Innovative tech products to enrich portfolio	Technology: tech
		Industry: machinery
		Proximity to core business: core products
	Innovative complementary tech products	Technology: tech
		Industry: machinery components
		Proximity to core business: technology components enriching core products; not core competence
Corporate 3	Innovative tech process solutions for administrative processes	Technology: tech
		Industry: software
		Proximity to core business: technologies used to support administrative business processes; not core competence
	Innovative complementary tech products	Technology: tech
		Industry: software
		Proximity to core business: technology enriching core products; not core competence
	Innovative tech products to enrich portfolio	Technology: tech
		Industry: different
		Proximity to core business: core products
	Innovative tech process solutions for production	Technology: tech
		Industry: software
		Proximity to core business: technologies used to support core business operations; not core competence

	Innovative complementary tech products	Technology: tech
		Industry: software
		Proximity to core business: technologies used to support administrative business processes; not core competence
Corporate 4	Sustainable complementary tech products	Technology: tech
		Industry: different
		Proximity to core business: technologies used to enrich core products; not core competence
	Innovative tech process solutions	Technology: tech
		Industry: software
		Proximity to core business: technologies used to support core business processes; not core competence
	Innovative tech process solutions for administrative processes	Technology: tech
		Industry: software
		Proximity to core business: technologies used to support administrative business processes; not core competence
	Innovative tech products to enrich portfolio	Technology: tech
		Industry: different
		Proximity to core business: core products
	Innovative tech products to enrich portfolio	Technology: tech
		Industry: different
		Proximity to core business: core products

3.4. Data Sources and Data Collection

I collected longitudinal real-time data throughout the six-month matchmaking process for the upcoming PA cohort (see Table 15). Real-time data collection allowed me to mitigate retrospective sense-making, rationalization biases, and impression management (Eisenhardt & Graebner, 2007). The PA granted me access to rich observational and interview data as well as written data sources such as the startup evaluation software tools used by the PA and the corporate sponsors and confidential internal documents that are common for process research (Langley & Abdallah, 2016). To obtain a holistic perspective on the process and capture meaningful events, I regularly aligned with the sourcing manager to identify upcoming events, determine relevant time slots for field visits and interviews, and request access to secondary data. My data focuses on the development of the

matchmaking process from the PA's perspective, starting with the definition of the collaboration areas.

Table 15: Main Data Sources

Data Source	Types of Data	Main Use in Analysis
Observations (35 formal observation points)	**Observations of PA-corporate interactions** 4 meetings for startup assessment with 4 corporate sponsors **Observations of PA-corporate-startup interactions** 24 initial meetings between corporate and startup 3 out of pitch events to select startup for cohort 3 startup events conducted with the corporate sponsors 1 final demo day pitches	Insights into matchmaking process design Insights into the interaction between PA, corporate sponsors, and startups Insights into corporate decision processes and PAs impact/ steering
Semi-structured interviews (52 with average duration of 41 mins)	**Pre-interviews with ecosystem experts** 20 interviews **Interviews with PA employees throughout the matchmaking process (8 out of 10 employees)** 2 interviews with 2 heads of entrepreneurship center 3 interviews with 2 MDs 11 interviews with 2 sourcing managers 4 interviews with 2 sourcing analysts **Interviews with PA employees during or after PA cohort** 1 interview with MD 2 interviews with sourcing manager 1 interview with program coordinator 1 interview with program manager **Interviews with entrepeneurial support organizations in startup ecosystem** 3 interviews with organizations supporting startups at an earlier stage (prior to PA) 2 interviews with organizations supporting corporates (partially PA sponsors) with startup collaboration 2 interviews with VC firms working with PA	Insights into matchmaking process design Insights into PA's beliefs about its role as matchmaker, its relationships to parties on both sides of the boundaries, and its main added value compared to the direct interaction between corporates and startups Retrospective account of the PA's historical development
Access to startup evaluation software tools (continuous throughout matchmaking process)	**Tool used by PA to list, prioritize, and contact scouted startups**: continuous access **Tool used by PA and corporates to evaluate startup applications**: continuous access **Evaluation sheets used by PA and corporates for startups:** after personal interactions and pitch events	Insights into matchmaking process design and boundary objects supporting the process Insights into scope and composition of startup pipeline and characteristics of applicant startups Insights into evaluation patterns and criteria used by corporate sponsors and PA

| Internal documents and online material | 30 internal documents and presentations
36 weeks of web and social media postings, 25 press releases and online articles | Contextualize and detail information matchmaking process and its performance |
| | | Insights into PA's self-promotion towards startups as the basis for subsequent matchmaking processes |

Real-time observations. The primary data sources were 35 non-participatory observations of meetings as well as informal observations in the PA office (30% of the first author's research time). We participated in important meetings and events marking milestones throughout the 6-month matchmaking process and afterward created memos (approximately 350 pages) to summarize insights and explore avenues for theorizing (see Table 16). For example, I observed recurring startup evaluation meetings between the PA and the corporate sponsors, internal meetings of the PA's team, and startup pitch events involving all three actors. I took thorough notes in each observation or conversation and enriched the notes with additional context information and remarks on personal impressions immediately following the visit. Due to the long-term involvement of one author with the PA, I embedded my findings into the historic context, which allowed us to develop a comprehensive understanding of the antecedents of the matchmaking process and to contrast emerging concepts with observations of previous matchmaking processes, evolving relationships between the PA, and the different actors as well as altering strategic motives.

Table 16: Observation Data Overview

Type of Event/ Observation	Description	Main Insights
Matchmaking process: meetings for startup assessment with corporate sponsors	**Timing:** multiple meetings with each corporate sponsor after each step of the matchmaking process (end of the application process, initial meetings between corporates and startups, startup pitch event)	Decision process and argumentation of corporate sponsors (in favor or against startup)
(duration: 50–120 minutes)	**Goal of meeting:** select startups for the next matchmaking process step as final project partners **Number of observations:** 4	Interaction between PA and different units in corporate organizations
	Involved stakeholders: PA employees: MD, sourcing manager, sourcing analyst	Impact of PA on corporate decision-making process

	Corporate sponsors: employees innovation unit, employees functional unit	
Matchmaking process: initial meetings between corporate sponsor and applicant startup (duration: 20–30 minutes per startup)	**Timing:** 3–4 months of matchmaking process **Goal of meeting:** individual startup pitch to get to know product and team, mutual assessment of fit for collaboration project between corporate and startup **Number of observations:** 24 **Involved stakeholders:** PA employees: MD, sourcing manager, sourcing analyst Corporate sponsors: employee functional unit, sometimes employee innovation unit as well Applicant startups: one startup team per meeting	Startup business model and goals for collaboration project Interaction/dynamics between corporate and startup Role of PA as moderator/mediator between the parties
Matchmaking process: pitch events to select startup for cohort (duration: 90–120 minutes)	**Timing:** 4–5 months of matchmaking process **Goal of meeting:** startup pitch event to compare multiple startups, commonly involving more corporate representatives as jury **Number of observations:** 3 **Involved stakeholders:** PA employees: MD, sourcing manager, sourcing analyst Corporate sponsors: employees innovation unit, employees functional unit, sometimes management or other employee groups Applicant startups (finalists): multiple startup teams	Interaction/dynamics between corporate (including management and/or broader organization) and startups Role of PA as moderator/mediator between the parties
Cohort: startup events conducted with the corporate sponsors (duration: 30 minutes)	**Timing:** throughout cohort **Goal of meeting:** introduce corporate sponsors to additional startups in the ecosystem (not applicants, not in the cohort) to create pipeline for upcoming cohorts **Number of observations:** 3 **Involved stakeholders:** PA employees: sourcing manager, sourcing analyst Corporate sponsors: employee innovation unit Startups: startups that registered for event	Corporates' strategic focus PA's funnel building for upcoming cohorts Role of PA as moderator/mediator between the parties
Cohort: final demo day pitches (duration: 90 minutes)	**Timing:** end of cohort **Goal of meeting:** present startups' progress/development throughout the accelerator program, present results of the collaboration projects, introduce startups to other entrepeneurial support organizations (e.g., VC firms) **Number of observations:** 1 **Involved stakeholders:** PA employees: MD, sourcing manager, sourcing analyst Corporate sponsors: employees innovation unit, employees functional unit, open event for all interested corporate employees Participant startups: startups that participated in the cohort	Development of collaboration projects Development of startups throughout PA program

Interviews. To capture all aspects of interests and remain open to emerging topics and concepts I conducted 52 formal semi-structured pre-interviews with ecosystem experts as well as interviews with PA employees and stakeholders within the PA's ecosystem throughout the matchmaking process and the program (approximately 310 pages of transcript, single-spaced with font size 12). The interviews were conducted as video calls via an online meeting platform (Zoom or Google Meet) and had an average duration of 41 minutes (maximum length: 65 minutes; minimum length: 22 minutes). I interviewed all six PA employees involved in the matchmaking process and the MDs multiple times during the six months. To triangulate the data, I spoke with actors in the PA's ecosystem, gathering the perspectives of management employees in the entrepreneurship center to which the program was affiliated, other down-stream (e.g., startup consultants, earlier stage PAs, and incubators) and up-stream (e.g., VC) entrepreneurial support organizations, and organizations working with the PA's corporate sponsors (Jick, 1979). In addition to the real-time accounts in the current matchmaking process, I reflected in the interviews retrospectively on previous matchmaking processes and the relationships between the PA and long-term corporate sponsors (Gioia et al., 2013; Langley, 1999).

The interviews and interview guidelines (see Appendix A4) were adapted to reflect the relevant developments and events throughout the matchmaking process and the role of the interviewee in the matchmaking process (e.g., PA managers were more knowledgeable about relationships with corporate sponsors, operative employees were more knowledgeable about process details and startups; Gioia et al., 2013). Throughout the first interviews, I focused on the matchmaking process design and its development over the last cohorts as well as the relationships and mode of cooperation between the PA and corporate sponsors. As I assessed the matchmaking process of the upcoming cohort, I continuously adapted the interview guideline but still consistently captured (i)

the main events in each process step (e.g., the role of PA, corporate sponsor, startup) to comprehensively document the series of events as common for the collection of process data (van de Ven & Engleman, 2004), (ii) the PA's perspective on the emerging relationships (between the PA and startups/corporate sponsors as well as between startups and corporate sponsors), (iii) the perspective of the PA on common hurdles in this interaction between the corporate and startup to assess the boundaries as well as hurdles and positive developments occurring in the matchmaking process under observation, and (iv) the anticipated matchmaking success by the PA. Each interview was audiotaped and transcribed by the author within one week after the interview. Moreover, I extracted the main insights immediately after the interview to ask follow-up questions in the subsequent field visits or interviews.

Ongoing access to startup evaluation tools used by the PA and corporate sponsors. As a source of written real-time data, the PA provided me with continuous access to its startup evaluation software tools. Such tools comprised detailed longitudinal information on the PA's startup funnel with initially approximately 1,500 scouted and approximately 400 applicant startups as well as applicant startup profiles. Particularly insightful was the access to a Microsoft Excel tool that the PA used to administrate the startup scouting process. The tool summarized the corporate collaboration areas, the PA's targets for the number of startups to be scouted per collaboration area, a list of startups to be approached/sourced, and the e-mail drafts and mailing status for the startups. Second, I obtained access to the software used by the PA and corporate sponsors for application management and the evaluation of the startups. The software contained application documents and data (e.g., product and technology, business model, team composition, geographical location) as well as collaboration preferences (e.g., preferred corporate sponsor, description of potential collaboration project) of all startups applying for the upcoming cohort. Additionally, the tool

captured the verbal and numerical startup evaluations by the PA and all corporate units providing me with a detailed account of the dynamics between the PA and corporates throughout the evaluation process (see Appendix A10 for screenshots of the tool).

Secondary data. Moreover, I collected confidential internal documents, accumulating to 1.5 gigabytes of data and 920 single documents, serving as triangulation data as well as data from secondary sources (Yin, 2011). Internal documents included presentations on the matchmaking process and collaboration areas as well as analyses of the performance of the process and matchmaking results by the PA. The documents offered additional contextual information on the process design and the perceived process performance in comparison to the previous matchmaking processes (see Appendix A11 for performance evaluation of the matchmaking process). Furthermore, written communication towards corporates but particularly towards startups (e.g., emails, chats) provided new insights into the PA's communication towards the participant organizations. As e-mails were the main communication channel with hundreds of startups, the mailing provided me with rich insights into the PA's argumentation pattern towards the startups along different process steps (e.g., e-mails attracting startups to apply by marketing the program and e-mails rejecting or accepting them into the program; see Appendix A12 and A13). Finally, I screened the PA's social media platforms, such as Facebook, LinkedIn, and Instagram, as main channels for public communication to better understand its massaging, especially towards the startup ecosystem. In total, I connected approximately 400 single files and 300 megabytes of data.

3.5. Data Analysis and Coding

For the data analysis, I largely followed the recommendations by Gioia et al. (2013), while selectively employing tools common from other case study or process research approaches (e.g., Langley, 1999). I started the analysis simultaneously with the data collection process (Cobin & Strauss, 1990; Glaser & Strauss, 1967) and processed the data in several steps.

Creating a visual map of the process. I first generated a comprehensive, descriptive model of the process steps, timelines, and events to create a visual map (Langley, 1999). This intermediary step between raw data and the theoretical model allowed me to process the large amounts of collected data and to develop an understanding of the complex matchmaking process run by the PA (Langley, 1999). The complexity of the matchmaking process was driven by the number of process steps and sub-steps executed in parallel by the PA in cooperation with the corporate sponsors, the different roles taken on by PA employees, the number of involved units in the corporate sponsors' organizations, and the diverse boundary objects employed by the PA to exchange information throughout the process. I used a digital whiteboard to initially represent the process and continuously expanded the representation when obtaining new insights throughout the data collection process.

Initially, I reconstructed the matchmaking process steps and timeline based on written process descriptions provided by the PA as well as insights from the interviews. This revealed three distinct steps with numerous sub-steps or tasks that were implemented by the PA throughout the six-month process. To better understand the dynamics of interactions between the PA, its corporate sponsors, and the applicant startups, I outlined their roles along each step of the process, such as the accelerator's role in per-evaluating and the corporates' role in evaluating applicant startups. For an in-depth understanding of corporate sponsor organizations, I enriched the process overview with

descriptions of the individual corporates based on publicly available information on the organization in general (e.g., business units, main products), their ECV activities, their public communication about the collaboration with the PA (e.g., press releases, website articles), and an interview-based description of the historic collaboration between the PA and corporates. To understand how the number and type of startups evolved, I developed a model of the startup funnel along the identified process steps and startup collaboration areas, and I added an aggregated version to the visual map. The PA employed a variety of boundary objects to support the exchange and storage of information, especially with the corporate sponsors (Carlile, 2002). These boundary objects included templates to describe the collaboration areas together with the corporate sponsors, a software-based startup application and evaluation tool, and evaluation sheets distributed after startup meetings to corporate sponsors. Additionally, the boundary objects allowed the PA to introduce standardized formats, methods, and language to ease the communication flow with corporates and startups (Carlile, 2002). I then captured the object type (e.g., software tool, spreadsheet tool), user groups (e.g., corporate innovation unit, corporate functional unit [name], PA scouting manager), and functionality of the boundary object (e.g., consolidate scouted startups and manage outreach, manage applications and evaluate applicant startups). Finally, I added particularly relevant background information (e.g., collaboration area descriptions, and evaluation criteria) to the visualization.

Identifying first-order codes. Building on my understanding of the matchmaking process, I engaged in a coding process following the recommendations of Cobin and Strauss (1990) and Gioia et al. (2013). I started the analysis with open- or first-order coding to accurately incorporate the informant's statements and terms (Gioia et al., 2013; Strauss & Corbin, 1998). I also identified core quotes related to the PA's role as a mediator between the asymmetric participant organizations and

clustered the quotes to distill the first set of codes. Initial first-order codes touched on diverse topics related to the PA's actions to support corporate sponsors (e.g., understanding the strategic needs of corporate sponsors, putting the corporate into a decision-making position, acting as interface/spokesperson towards startups), the PA's actions to support startups (e.g., creating transparency for startups, facilitating information transfer to corporates, sharing insights about the startup way of working with corporates), and to achieve envisioned/fostered outcomes (e.g., quality: optimizing the selection for collaboration area fit and collaboration projects).

To refine emerging codes, I iterated between the data and themes described in the accelerator (e.g., corporate sponsorship; Bergman & McMullen, 2021; Cohen et al., 2019b), boundary organization literature (e.g., design elements of boundary originations; O'Mahony & Bechky, 2008), and boundary spanning literature (e.g., antecedents/conditions for boundary spanning, comparable boundary spanning processes, and boundary spanning mechanisms; Aldrich & Herker, 1977; Birkinshaw et al., 2017; Carlile, 2004; Colman & Rouzies, 2019; Monteiro & Birkinshaw, 2017). Following Dubois and Gadde's (2002) recommendations I did not force the data into these predefined categories; however, when suitable categories existed, I used them (e.g., first-order code "mobilizing corporate functional units" builds on mobilizing as a construct introduced by Colman and Rouzies (2019). Furthermore, I triangulated my data sources to identify patterns and differences, especially in the perception of the PA's role as a boundary organization or spanner between corporates and startups, thereby validating my codes and enriching the emerging theory. As my understanding of the case advanced through new layers of understanding from data analysis, I re-categorized the first-order codes multiple times and added new codes to more accurately reflect the PA's roles as a boundary organization (Strauss & Corbin, 1998).

Final codes, captured the PA's activities prepare as well as conduct the matchmaking process under observation. Exemplarily, from the quotes on the collaborative definition and the refinement of startup collaboration areas involving the corporate sponsors and the PA, I distilled the first-order code "transforming collaboration areas with corporates" (e.g., "we agree on the [collaboration areas]" [SM][10], "a [collaboration areas] is more or less a PowerPoint template that we fill out together" [SM], "We contribute our expertise with the startup perspective" [SM]; (compare Carlile, 2002). Such collaboration areas were then translated into startup-friendly language and communicated to startups via different communication channels, yielding the code "translating collaboration areas to startups" (e.g., "For [cohort number] [name Corporate 1] is looking for startups in the following fields"; compare Carlile, 2002).

Additionally, I developed codes to help me understand the conditions that emerged or were created by the PA before the start of the matchmaking process under observation—structures, knowledge, and relationships established between the PA and corporate sponsors as well as the startup ecosystem. To capture the PA's startup ecosystem embeddedness, the interviews with other entrepreneurial support organizations in the startup ecosystem were particularly valuable. For example, I identified phrases that illustrate how the PA builds relationships with the corporate sponsors throughout the partnerships that often last more than two years, and I developed an understanding of the corporate needs as antecedents of the matchmaking process. The phrases aggregated into the final first-order codes established relationships ("getting the departments on board [..]" [SM]; "a very close, trusting relationship" [SM]) and understanding corporate needs

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[10] I reference to my data sources as follows: Observation Pitch Events = OP; Observation Meeting = OM; Interview Heads Entrepreneurship Center = HEC; Interview PA Managing Directors = MD; Interview PA Sourcing Manager = SM; Interview PA Sourcing Analyst = SA; Interview PA Program Manager = PM; Interview Ecosystem Experts = EE; Startup Evaluation Tools = ET; PA Internal Documents = ID; Online Data = OD

("because we know their innovation topics, for example"). At the end of the coding process, 47 first-order codes emerged.

Aggregating first-order into second-order codes. Once I recognized that no new first-order codes were emerging from the data, I started to cluster similar codes into broader second-order themes. In my axial- or second-order analysis, I tried to identify patterns in the data to detect theoretical concepts explaining the observed phenomena (Gioia et al., 2013; Glaser & Strauss, 1967; Strauss & Corbin, 1998). At this stage I started to infuse my knowledge and interpretations into the data, as Gioia et al. (2013) state "treat ourselves as knowledgeable agents" (p. 20). I grouped contextually related first-order codes to create categories representing a coherent whole (Strauss & Corbin, 1998). Comparing data once again from different sources and across matchmaking process steps, I tried to distill the main mechanisms the PA employed to span boundaries between corporates and startups—thereby carefully distinguishing between the two participant groups. To distinguish new concepts from existent ones (Gioia et al., 2013), I repeatedly compared emerging second-order concepts to theoretical referents from the PA, as well as boundary spanning and boundary organization literature (Aldrich & Herker, 1977; Bergman & McMullen, 2021; Cohen et al., 2019b; Monteiro & Birkinshaw, 2017; O'Mahony & Bechky, 2008).

Starting with initial board categories, I gradually specified the concepts (Gioia et al., 2013). For example, the constant iteration process revealed patterns in the PA's relationship and knowledge-building with corporate sponsors and on the startup ecosystem side (Miles & Hubermann, 1984). I grouped these patterns into the second-order theme, "building know-how & relationships with participant organizations," a condition partially addressed in the boundary spanning literature as structural and relational social capital (Colman & Rouzies, 2019; Monteiro & Birkinshaw, 2017).

While I tried to actively abstract in this analytical step from the process steps identified in the initial visual map, focusing more on overarching patterns in the PA's boundary spanning behavior, some actions and concepts were particularly relevant and therefore were expressed dedicatedly in a particular matchmaking process step. One example is the second-order theme "uncovering (additional) collaboration project opportunities," which captures a two-sided process towards corporates, including mobilization and the transformation of collaboration areas, as well as towards startups, including the translation of technology areas, scouting, and attraction of suitable startups. This concept of creating awareness of and understanding the potential collaboration opportunities is relevant merely at the beginning of the matchmaking process but is still a crucial mechanism in the enactment of the PA's boundary spanning. I continued the iteration process by adding concepts and reflecting on them based on new data insights until I had the impression that the new data did not add any insights on the PA's role as a boundary spanner but confirmed the existing ones—I concluded saturation (Glaser & Strauss, 1967; Strauss & Corbin, 1998). For example, diverse informants, internal but also external to the PA, confirmed that the PA anticipated the needs of corporates and startups as well as the typical hurdles in corporate-startups collaborations, leading to the second-order theme "anticipating general asymmetries between corporates and startups." This process brought about 17 second-order concepts.

Identifying aggregate dimensions. The further aggregation of the second-order themes into theoretically explanatory second-order aggregate dimensions was the next step of my data analysis (Gioia et al., 2013; Strauss & Corbin, 1998). While I had started to look for theoretical themes during the second-order coding, I shifted the logical frame from data analysis to theory development completely in this process step by repeatedly reflecting on the identified concepts or mechanisms (Gioia et al., 2013). All theoretical dimensions emerged based on an iterative

aggregation of the second-order themes. For example, factors enabling the PA to act as a formal bridge between divergent worlds were frequently recurring elements in my code. From one author's previous interaction with the PA, I derived how "general expertise and connections in both worlds" allowed the PA to recognize and establish "matchmaking as core service" towards corporates and startups. Additionally, the PA employees often described how their specific "relationships and know-how with participant organizations" allowed them to act as effective mediators between corporate sponsors and startups in the cohort. I grouped these antecedents that acted as an effective organizational mediator and that focused on enabling collaborations into "establishing as boundary organization" and identified it as a core theoretical dimension (presented in Section 4.2). This example shows how at this process stage my theoretical dimensions emerged from second-order themes unique to our single case. Figure 5 depicts my final data structure and the six emerged aggregate dimensions.

First-Order Codes

Defining matchmaking as core service of the accelerator, re-orienting branding and communication

Adapting existing team structures, Adding new roles

Employing a team with expertise in both worlds; Learning from process repetition; Establishing connections by contributing to the ecosystem

Establishing relationships across corporate units; Understanding corporate innovation goals & operations; Building on relationships to adjacent entrepreneurial support org.; Fostering acquaintance with startups in ecosystem; Understanding current startup ecosystem

Anticipating different needs of asymmetric organizations; Anticipating potential hurdles in initiating collaborations

Anticipating sponsors' challenges in startups interact; Anticipating issues in identifying matching startups

Designing matchmaking scaffolding to prevent general asymmetries; Adjusting scaffolding to reflect anticipated specific needs & hurdles,

Mobilizing corporate functional units; Transforming collaboration areas with corporates; Translating collaboration areas to startups; Scouting promising startups; Attracting startups

Second-Order Codes

Establishing pre-cohort matchmaking as core service

Adapting structures & roles to new service offering

Building general expertise & connections in asymmetric organizations

Building know-how & relationships with participant organizations

Anticipating general asymmetries btw. corporates & startups

Anticipating specific asymmetries btw. participant organizations

Launching matchmaking process scaffolding to anticipate hurdles

Uncovering (additional) collaboration project opportunities

Aggregate Dimensions

Establishing as boundary organization

Anticipating asymmetries between corporates & startups

Structuring matching

First-Order Codes

Attributing applicant startups to collaboration areas; Pre-evaluating startups based on criteria; Pre-evaluating startups based on match to collaboration area

Organizing alignment across corporate units; Acting as interface to promising startups; Moderating interaction between corporates & startups

Providing referrals for selected startups; Persuading corporates out of hastily decisions; Steering exchange between corporates & startups; Coaching startups to cope with asymmetry

Advocating startups towards corporates; Convincing startups to commit to collaboration project

Defining temporal and financial scope, Managing financial transactions, Acting as contracting partner, Triggering project planning

Kicking-off collaboration, Intervening through needs-based mitigation

Expanding connections with corporate units; Increasing corporate trust in service

Translating decision; Avoiding discouraging feedback; Voicing open-door rejections

Understanding general needs of and asymmetries between corporates and startups; Deepening know-how about participant organizations; Educating corporates about startup collaboration

Second-Order Codes

Pre-selecting applicant startups

Structuring corporate-startup interactions

Nudging towards collaboration projects

Navigating (potential) project realization hurdles

Providing operating scaffolding for collaboration project

Handing-over active boundary spanning responsibilities

(Re-)selling corporate sponsorship for future cohorts

Bridging failed matches into future cohorts

Learning from process repetition

Aggregate Dimensions

Structuring matching *(continued)*

Fostering realization of identified matches

Formalizing collaboration project
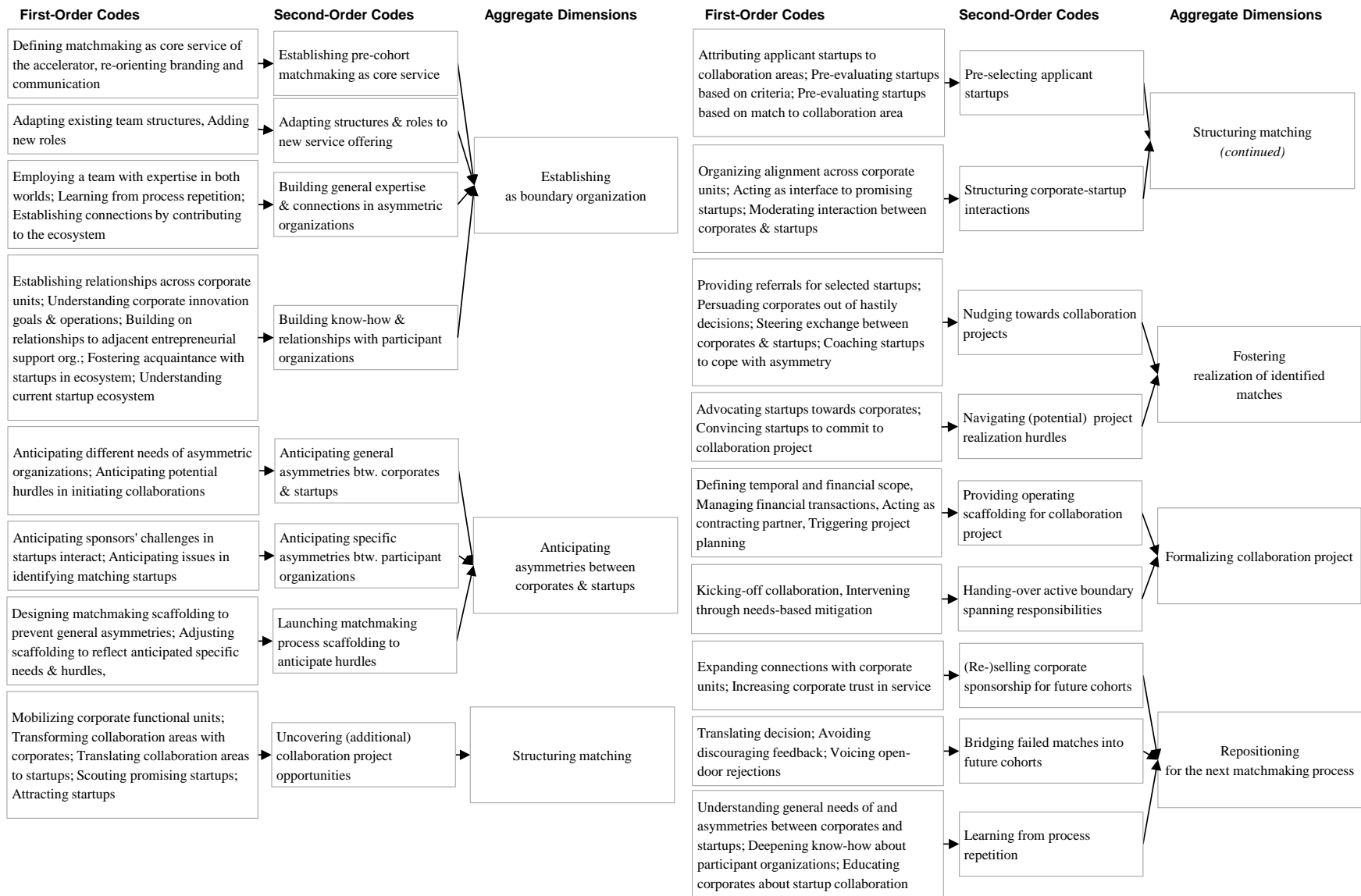
Repositioning for the next matchmaking process

Figure 5: Data Structure

Towards a process model. Finally, I focused on identifying and visualizing the relationships between my aggregate dimensions to design a process model (Gioia et al., 2013) that describes how the PA sequentially integrates different boundary spanning mechanisms to support the identification and realization of matches between changing participant organizations (Figure 7). We developed an initial broad model early in the analysis and constantly refined the proposed mechanisms, moving iteratively between the identified aggregate dimensions and second-order themes as well as the concepts from the boundary spanning literature (Birkinshaw et al., 2017; Carlile, 2004; Colman & Rouzies, 2019) and data in the descriptive model. An example of a crucial relationship was "anticipating general and specific asymmetries" between corporates and startups, which enables the PA to launch a matchmaking process that reconciles these asymmetries. The anticipation was possible because of the PA's described knowledge about startups and corporates as organizational types in general and the participating organizations in particular. Furthermore, I scrutinized the model and the relationships by reviewing them together with the PA sourcing manager. This feedback did not challenge my understanding of the phenomenon significantly, but it helped me refine the developed process model (Gioia et al., 2013).

4. Findings

My analysis uncovered a dynamic process model that reveals how the PA enabled the asymmetric organizations (i.e., multiple corporates and applicant startups) to connect, evaluate, and realize matches across boundaries for collaboration projects before the PA's cohort started. This chapter describes the boundaries spanned by the PA (Section 4.1), explains how the PA created the conditions for boundary spanning (Section 4.2), and elaborates on the employed boundary spanning mechanisms (Sections 4.3 – 4.7). Finally, the chapter integrates the identified boundaries, conditions, and mechanisms into one process model (Section 4.8).

Initially, I describe which external organizational boundaries exist between corporates and startups as well as which internal boundaries exist between corporate units the PA spanned throughout its matchmaking process. While I acknowledge that boundaries exist between all organizations, I show that corporates and startups face syntactic (i.e., a lack of connection and therefore the opportunity to transfer information), semantic (i.e., difference in language), and political (i.e., difference in goals and interests) boundaries that are broadened by their asymmetries, which causes additional hurdles to be surpassed when initiating collaborations (Carlile, 2004). The model has three elements structuring the PA's different boundary spanning mechanisms: (i) *organizational structure*, (ii) *process scaffolding*, and (iii) the *individualized matchmaking process*.

First, the PA creates the necessary conditions by *establishing* (and with each matchmaking round re-positioning) itself as a (i) *boundary organization* with matchmaking as its core service for corporates and startups. Second, building on its knowhow and relationships as a boundary organization, the PA *anticipates general asymmetries* between the different organizational types (i.e., corporates and startups) as well as *specific asymmetries* between the participant organizations (i.e., corporate sponsors and applicant startups). It creates a matchmaking (ii) *process scaffolding*, which by design pre-empts *anticipated* hurdles that might arise in the coordination between asymmetric corporates and startups. As scaffoldings, I refer to pre-defined structures of process steps, software tools, and other objects (e.g., templates, contracts) along which the PA conducts each matchmaking process. Throughout each (iii) *matchmaking process* round, the PA employs the process scaffolding with some needs- and circumstance-based modifications to *structure* the matching of corporates and startups. Once the matches emerged, *situational interventions fostered* their realization in collaboration projects. In contrast to the existing literature on bridging boundaries (e.g., Guston, 2001; Klueter & Monteiro, 2017; Monteiro & Birkinshaw, 2017; O'Mahony & Bechky, 2008) and (corporate)

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accelerators (Shankar & Shepherd, 2019), my model suggests that the PA exits its role as a boundary organization once it formalizes the collaboration projects using its *project scaffolding*.

4.1. Boundaries Spanned by the PA

My data reveals that the PA spanned external organizational boundaries between corporates and startups as well as internal organizational boundaries between different corporate units. In the context of my research boundaries need to be spanned between multiple changing corporate sponsors and hundreds of applicant startups with unique codes, routines, or protocols (i.e., syntactic boundaries; Carlile, 2004); language (i.e., semantic boundaries; Carlile, 2004); and political interests (i.e., political boundaries; Carlile, 2004) to initiate collaborations. Engaging multiple stakeholders on both sides of the boundary complicated the boundary spanning process.

First, the PA supported the unfamiliar organizations in surpassing a syntactic boundary (i.e., knowledge transfer boundary) to share information and collaborate across incompatible codes, routines, or protocols (Carlile, 2004; Kellogg et al., 2006). The boundary is relevant since industry-focused corporates are inexperienced in identifying young and poorly marketed technology startups that are usually not focused on one industry (see Appendix A9 for details on applicant startups). In addition, startups are often not aware of corporate collaboration opportunities in certain technology or business areas—especially if the collaboration areas are perceived to be outside the corporate's core business (e.g., "focusing more on information technology topics that are not, shall I say, directly related to [Corporate 3]. Then it's harder to get good applications in those fields. […] So if the startups can't identify with it, then the quality is lower" [SM]). Therefore, an initial connection and information transfer are challenging. The PA spanned this boundary by identifying and connecting potentially suitable partners. Initially, it collected startup applications and evaluated them with the corporate sponsor, thereby already transferring information in both directions. Later in the matchmaking process they introduced

startups and corporates in meetings (see Section 4.4 for a comparison to bridging by Colman and Rouzies (2019)). The matchmaking process followed a stable process scaffolding with pre-defined process steps, tools, and boundary objects (e.g., templates, contracts; see Section 4.3 for details). Along the scaffolding, the PA could operationalize a stable process with clear specifications and standards that support communication and information transfer across boundaries.

Second, corporates and startups face a semantic boundary, in other words, dissimilarities in meanings, assumptions, and contexts (Carlile, 2004; Kellogg et al., 2006). Semantic boundaries describe the distance between corporates' and startups' knowledge bases concerning distant technological domains, different experience levels within an industry ("And in a corporate company, yes, you have incredible domain knowledge" [HEC 1]; "The majority of founders do not have an industrial background, but are founding a company for the first time, in this industry for the first time" [HEC 1]), as well as different work cultures ("but also the culture of the two spheres [of corporates and startups] is very different" [HEC 1]). These semantic boundaries caused differences in the interpretation of meaning, assumptions, and context (Carlile, 2004), as noted by one interviewee: "Well, I think it already starts with the fact that people talk past each other" [HEC 1]. I mainly observed a gap in technological domain knowledge between corporates looking for complementary products or internal processes innovations (hence that did not operate in one of the corporate's core business areas) and startups that are experts in their particular technology but commonly lack industry expertise. Additionally, I observed language problems between internal startups and locally anchored corporates. The PA supported the participant organizations in surpassing semantic boundaries by providing diverse opportunities for information exchange since it did not have the competence to translate directly. To ensure relevant information is explained and translated, it structured the information exchange with the startup evaluation tool as boundary objects as described in the

literature (Bechky, 2003; Henderson, 1991; Star & Griesemer, 1989). Specifically, the PA pre-structured a meeting such as a "pre-discussion with potential candidates" [OM, website] and corporates as well as "Pitch Events with [name PA] & Corporate Partners" [OM, website] (see Section 4.4 for details on code *moderating interaction between corporates & startups*). Furthermore, different languages complicated the communication between corporates and startups, as noted by one interviewee:

> Because there is a mediator between them—it is often as banal as it is a language problem. Recent experience with [corporate sponsor in acquisition process], again as an example, where we have also mediated, where you first had to make both sides able to talk to each other. [HEC 1]

To span this boundary, the PA adjusted its communication style to the respective stakeholder (e.g., in the web or social media communication). Additionally, the PA translated the written communication between the organizations where necessary—for example, creating commonly understandable artifacts such as the collaboration area description (see Section 4.4 for details on code *translating collaboration areas to startups)*. A scouting analyst elaborated on the collaboration area descriptions:

> The corporates say we would like to solve a certain problem, we would like to look at a new market. Then they [the corporate sponsors] say, [technology collaboration area] is exciting for us, but then it's up to us to really flesh it out. Because if we then simply search for [technology collaboration area], that would be too untargeted. […] So what are we looking for. So this refinement, examples, that's really up to us. So that we then really have a target picture of what we are looking for. [SA 1]

Finally, the PA employees constantly managed the verbal communication between corporates and startups (see Section 4.4 for details on code *moderating interaction between corporates and startups)*, employing and enforcing a mutually understandable syntax as suggested by past research (Bechky, 2003).

Third, political boundaries demarcated divergent interests between corporates and startups, for example when negotiating collaboration terms (Carlile, 2004). For example, a political

boundary could be a corporate sponsor's interest in an exclusive collaboration as the sourcing

manager described:

> So with new partnerships, of course, the challenge is always lack of mutual understanding. Lack of understanding of aspects that are important for startups. I wouldn't have to explain to an [corporate sponsor 2, experienced in startup collaboration] that exclusivity is very difficult for a [collaboration project]. To other new partners, absolutely. There is also little understanding that even a startup does not immediately rush into every project just because there is a big name on it. [SM]

The PA spanned this boundary by formalizing a scaffolding for the collaboration project

between corporates and startups, including temporal and financial conditions, contracting, and

parallel participation in the PA's cohort. The scaffolding offered a systematic solution with

mutually acceptable conditions, and thereby pre-empted negotiations or conflicts of interest

(see Section 4.6 for details on code *formalizing project*).

Furthermore, the PA spanned internal organizational boundaries between different corporate

units, namely the coordinating units and diverse functional units. Within corporate

organizations, the PA triggered the connection of and information exchange between previously

unconnected units across syntactic boundaries. It did so by fostering the mobilization of

functional units as collaboration project partners (see Section 4.4 for details on code *mobilizing*

and a comparison of mobilizing mechanisms in the literature by Colman and Rouzies (2019).

In this context, a startup evaluation platform and meetings for startup assessment (see Section

4.4 for details on code *organizing alignment meetings across corporate units*) offered the

corporate units a standard operating procedure to share information as suggested in the literature

(e.g., Grant, 1996). The sourcing manager describes the procedure:

> And we can also provide access [to the startup evaluation platform] to everyone [in the sponsoring organizations] who is involved in the application process. […] Exactly, then they [the corporate units] have 2 weeks after we have done the matching. We then sit down together in a longer meeting and decide on a shortlist of between 10–25 applicants, […]. [SM]

Additionally, the PA spanned political boundaries between the corporate units. While the coordinating innovation units were incentivized to foster corporate-startup collaborations, functional units were commonly prone to act resource and risk-conscious. Consequently, they tended to avoid additional startup collaboration projects. The PA as the boundary organization actively triggered and managed the exchange between the units, pushing towards collaboration projects. By providing the organizational and process framework (for details on codes *establishing as boundary organization* see Section 4.2, *launching the matchmaking process scaffolding to anticipate hurdles* see Section 4.3, *providing operating scaffolding for collaboration projects* see Section 4.6), the PA facilitated the collaboration between the units and fostered the alignment of the unit's interests as described in the literature for other contexts (Carlile, 2004). The sourcing manager described the advantages of the provided scaffoldings for the functional units: "And the nice thing is that the budget is provided centrally […], they [the functional units] do not have to pay for it. The program is managed and they don't have to take on much risk, nor any financial risk" [SM].

Finally, semantic boundaries were primarily relevant between the PA and the corporate units—particularly functional units involved in the process for the first time. The PA provided the startup evaluation tools as boundary objects with a pre-defined structure (e.g., structured questions and guidelines for startup applications, a startup assessment system) and pre-evaluated the startups along a set of criteria (see Section 4.4 for criteria overview) to establish shared semantics. Thereby, the PA provided a holistic communication framework creating a common ground when discussing and evaluating startups. The framework served as a boundary object as suggested in previous work (Bechky, 2003; Kellogg et al., 2006).

4.2. PA's Establishing as a Boundary Organization

Before the start of the matchmaking process in the focus of this study, over six years the PA conducted more than 10 cohorts with approximately 13 different corporate sponsors and

approximately 130 startup collaboration projects. Throughout the 10 cohorts, the PA engaged in *activities that contributed to its establishment as a boundary organization between asymmetric (changing) corporates and startups*. The organizational boundaries between corporates and startups created the demand for a boundary spanner or boundary spanning organization. As a boundary organization, the PA filled the void building "enduring organizational bridge[s]" (O'Mahony & Bechky, 2008, p. 454) to enable the initiation of collaboration projects between continuously altering, different, or asymmetric organizations.

To span boundaries, the PA claimed structural legitimacy in the corporate-startup ecosystem qua role (Kislov et al., 2017; Lockett, Currie, Finn, Martin, & Waring, 2014). Structural legitimacy is defined as symbolic capital inherent in a role or position as a boundary organization and is a necessary condition for effective boundary spanning (Lockett et al., 2014; Tushman & Scanlan, 1981). The PA worked on positioning itself as a boundary organization with structural legitimacy in the startup ecosystem by creating general knowledge and connections. For example, the PA communicated its boundary spanning role proactively on its website (e.g., "Co-create with the best: Join the leading tech-startup accelerator in Europe" [OD, PA website]) and different social media channels (e.g., the MD participated in a public talk "Don't forget to tune in next week when our managing partner [name MD] and [name corporate sponsor] share insights on how startups can find their way in the enterprise world" [OD, PA social media]) to support its public positioning as boundary organization. Since structural legitimacy was a helpful but not a sufficient condition for boundary spanning (Lockett et al., 2014; Tushman & Scanlan, 1981), the PA worked on obtaining the acceptance of (potential) participant organizations by building knowledge and relationships with particular organizations. Obtaining acceptance allows the boundary organization to exercise influence and authority when spanning boundaries (Kislov et al., 2017).

Establishing pre-cohort matchmaking as a core service of the PA as a boundary organization. Establishing pre-cohort matchmaking as a core service for corporates and startups was a key action of the PA to position itself as a boundary organization. Operating over four years and approximately nine cohorts with an initial focus on the acceleration program (including mentorship, office space, and/or education for startups; Cohen et al., 2019b), the PA recognized that matchmaking between corporates and startups to span the organizational boundaries was a desired service rather than being only a means to source startups for the program. As described in Section 3.2, the PA went from establishing mere connections between corporates and startups (Year 1: "Access to the most successful enterprise partners in your industry", "Get in touch with startups that may innovate their business" [OD, PA website year 1]) to offering actual collaboration projects with the corporate sponsors (Year 6: "Co-create with the best: Join the leading tech-startup [name PA] in Europe!," "Collaborate with one of our leading corporate partners to further develop your product or service" [OD, PA website year 6]). It undertook the strategic decision to establish "the whole process—from defining the [collaboration areas] to which startup fits" [MD 1]—as its core service (see Table 13). By doing so, the PA focused its services on "bridging divergent worlds while preserving elements that are distinct to each" (O'Mahony & Bechky, 2008, p. 453), a core characteristic of boundary organizations. An employee described the PA:

> In a word, I would say matchmaker. I think that sums it up best. [...] but I think for the startups and what [PA name] has as a [unique selling point] is this matchmaking and that the startup can quickly implement a [collaboration project] with a major customer [once the cohort starts]. [SM]

The matchmaking services were perceived as a distinctive feature to other PA programs by the employees: "Exactly, those are the [unique selling points], one part is the [collaboration project], the second part is our program" [SM].

Adapting structures and roles to a new service offering. To offer matchmaking services creating organizational bridges across diverse boundaries (see Section 4.1), the PA built a durable structure enabling collaboration (Carlile, 2004; O'Mahony & Bechky, 2008)—also a core characteristic of boundary organizations. The PA started with an organizational structure that was common for many accelerator programs to deliver its value proposition of connecting corporates and startups. The structure included fixed roles and responsibilities (including management, program operations, mentorship: for example, "one MD and five senior managers as project team" [OM, website year one after PA foundation], "one MD and 4 operative team members" [OM, website year two after PA foundation], an operating logic (MD leading a small non-hierarchical team), a governance structure, and a membership model for corporate sponsors. However, the team learned through experimentation that to deliver the new value proposition—enabling collaboration projects—it needed to adapt to a new boundary organizational structure (e.g., "So we've completely rebuilt the [matchmaking] process. So what has always been there is that it has always been a multi-month process" [MD 1]). The PA considerably expanded its structure introducing new roles and "build[ing] up the internal team" [MD 1] to establish and run the matchmaking process in addition to the existent program management team. Considering that 10 people (thereof two MDs) worked at the PA at the time of data collection, the matchmaking team with three people was a considerable addition. The team was solely responsible for running the matchmaking process and directly cooperated with the MDs.

Building general expertise and connections in asymmetric organizations. The prerequisites for acting as a boundary organization between changing startups and corporate sponsors were, first, the acquisition of general expertise in working with both worlds and, second, the establishment of connections with organizations in both worlds. Thereby, the PA developed deep knowledge about the rules of the game—including roles, relationships, structures of

interactions, and challenges—prevalent in the interaction between corporates and startups (Currie & White, 2012; Kislov et al., 2017).

After more than three management changes in its early years of operation, the PA had been staffed with a team with previous experience in working with corporates as well as startups. Two MDs with substantial corporate and management consulting expertise in different industries as well as anchorage in the local startup ecosystem joined the PA (Table 17; (Cohen et al., 2019b). The MDs' experiences were described as a relevant enabler for acting as a boundary organization, particularly towards the corporate sponsors:

> Then certainly [name PA manager] has experience, once from consulting and... once as a competent contact for the startup world, I would say. That they [corporate sponsors] value his opinion. That they know that he is very bustling, has seen a lot in the startup world. That he can pass on a competent assessment of teams and so on. [SM]

Table 17: PA Matchmaking Employees' Experiences and Roles

Roles in PA (focus matchmaking)	Previous Experiences	Role and Tasks in PA
MD 1	**Professional experience:** startup founder, management consultant, corporate project manager in the automotive industry, manager of two corporate (manufacturing industry) ECV vehicles **Education:** master of business administration, master's degree in engineering	Program development, business development, corporate sponsor acquisition, operative corporate sponsor management/support, industry expert throughout the matchmaking process
MD 2	**Professional experience:** corporate project manager in the automotive industry, management consultant, VCs **Education:** master's degree in social sciences	Program development in particular topic areas, business development and corporate sponsor acquisition, operative corporate sponsor management/support, industry expert throughout the matchmaking process
Sourcing Manager	**Professional experience:** internships in corporate project management in the insurance industry and an independent company builder for corporates **Education:** master's degree in social sciences	Management of matchmaking process end to end, operative corporate sponsor management
Sourcing Analysts	**Professional experience:** internships in inhouse consulting, corporate business development, automotive, insurance, and pharmaceuticals industry **Education:** master's degree in social sciences	Startup scouting and evaluation

Additionally, the PA (im)proved its competencies in working with the two asymmetric organizational types throughout 13 matchmaking rounds where collaboration projects were typically initiated between approximately 10 startups and three–six corporate sponsors (see Appendix A5). Having worked with 13 corporate sponsors, with at least one sponsor changing in each matchmaking round (see Appendix A5), the PA built its boundary spanning capabilities when being confronted with different organizational practices and challenges in serving the corporate sponsors' needs: "They are really good at understanding what each new corporate needs because they know what corporates want in general, over the years they have just learned a lot. And by now, they see if and how the new corporate partner is special" [EE 1]. Focusing strategically on "business to business and tech companies" [SM], which can be integrated into the corporate sponsors' value chains, the PA additionally obtained expertise in connecting corporates with this type of startup (90% of startups selected into the investigated cohort had technology products), helping them to span technological or semantic boundaries associated with a different technology or industry background. For industry-focused corporates, it is particularly difficult to find and engage with early-stage technology startups, which tend to be industry agnostic.

The literature on boundary organizations indicates that the affiliated organizations by origin have a mandate for building bridges between the stable participant organizations on both sides of the boundary (Guston, 1999; O'Mahony & Bechky, 2008; Perkmann & Schildt, 2015). For example, communities of the open-source software movement created boundary organizations to collaborate with fixed established corporates in the software industry, and a triadic role structure emerged between the open-source community, one corporate, and the boundary organization (O'Mahony & Bechky, 2008). In contrast, due to its changing sponsors the PA needed connections within the ecosystem to continuously engage in the matchmaking process

with changing participant organizations. Regarding the ecosystem, I first consider the corporate innovation ecosystem including corporates with a (potential) need for support in their ECV activities, hence potential sponsors, and, second, the startup ecosystem including potential applicant startups and other ECV vehicles or entrepreneurial support organizations (see Figure 6). Therefore, the active contribution to the regional entrepreneurial and innovation ecosystem was crucial for the PA to position itself as a platform between the startup and corporate sides and to develop connections to organizations on each side.

Towards corporates, I observed extensive awareness-building activities throughout the cohorts (see Appendix A8 for example for public communication on website). Examples include engagement with innovation managers on startup fairs (e.g., "[…] personal contact when we go to trade fairs" [SM]), participation in large investor events organized by the entrepreneurship center (e.g., "It didn't take three weeks to call up a [sum]-figure volume with them. […], but they were already in the eco system, we have been in touch on events and then they just said cool" [HEC 2, Interview 1]), or individual engagement with companies through on-site tours and presentations. Additionally, corporate sponsors' public communication (e.g., "[…] with them, it's their job to make stories out of it. So they look at the applications and decide if they can make a good story out of that and we can't make a story out of that" [SM]) and a dissemination or word-of-mouth effect between sponsors and other corporates seeking support in their ECV activities are drivers of the PA's public positioning as a boundary organization (e.g., "They already recommend us among medium-sized companies if it fits" [SM]).
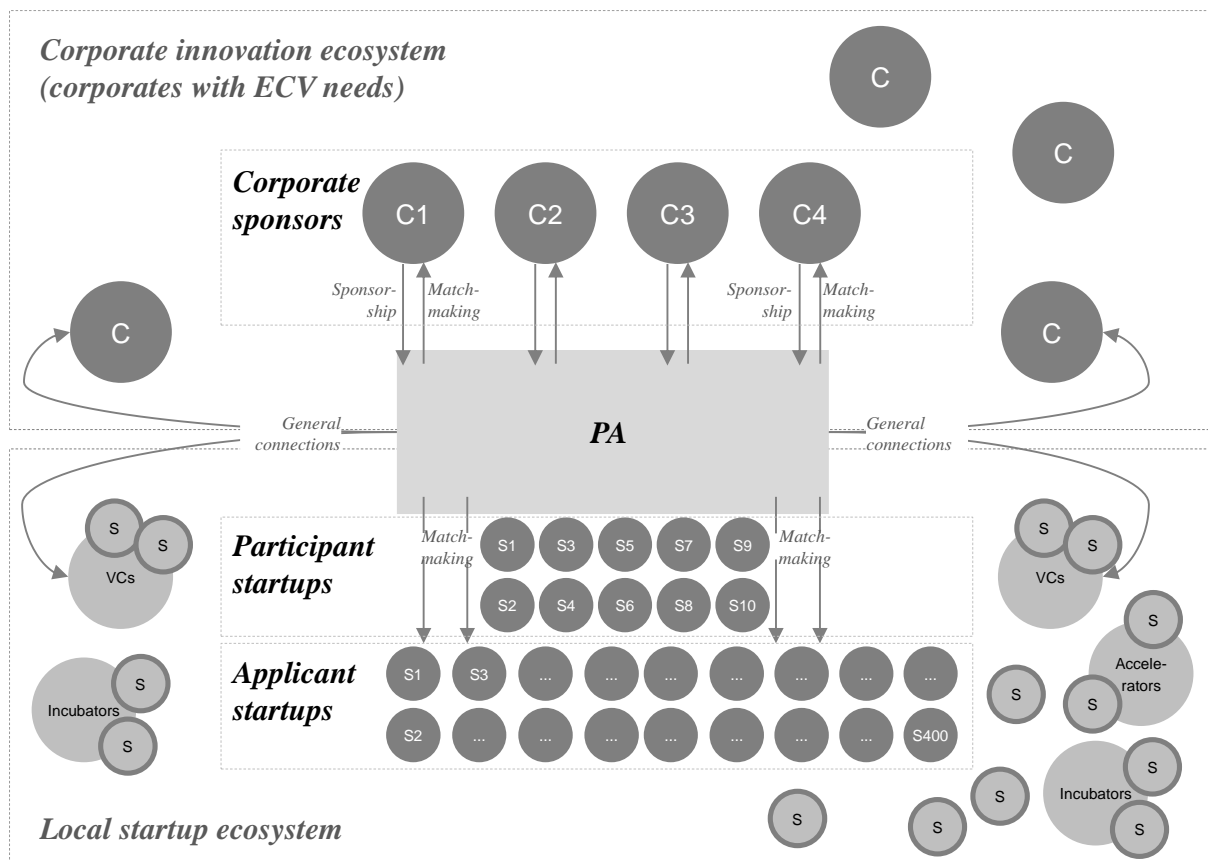
Figure 6: Overview PA's Participant Organizations—Corporates and Startups— and Connections to the Ecosystem

"We don't just monetize the ecosystem, but we give what we take back to the ecosystem and actually help the startup funnel stay filled," MD 2 said about the PA's engagement within the startup ecosystem. To engage with the ecosystem, the PA employees participated in events as moderators, panelists, or experts (e.g., "[name] our program manager, participates in the discussion together with other incubator program representatives from across the globe" [OD, social media]) or set-up networking as well as educational formats open for startups in the ecosystem (e.g., "Read our insights on the next article in our [business to business] Sustainability Startup Landscape series below and stay tuned […]" [OD, social media]; "We are hosting our very first [event name and date], and we are opening a few selected sessions for the public!" [OD, social media]). For the PA, becoming an active ecosystem member was a means to create awareness for the program, a reputation as a startup-friendly entrepreneurial

support organization as well as a network. These factors supported the public perception of the PA as a boundary organization in the startup ecosystem.

Building know-how and relationships with asymmetric participant organizations. Recent theoretical work on boundary spanning suggests that prior relationships (Colman & Rouzies, 2019; Huang et al., 2016) and social capital, including cognitive capital (Monteiro & Birkinshaw, 2017), are conditions for successful boundary spanning. In addition to its establishment in the general ecosystem, the PA built relationships with particular participant organizations from both worlds (i.e., corporate sponsors and applicant startups participating in the matchmaking process) and know-how about them. As suggested by literature on the legitimation of boundary spanning roles and practices (Kislov et al., 2017), the acquired capital supported the PA's legitimation process as a boundary organization between corporate sponsors and the startup ecosystem.

The PA invested considerable efforts in establishing connections or relationships in the corporate organizations as well as maintaining close relationships with other entrepreneurial support organizations and startups in the ecosystem (i.e., relational capital; Nahapiet & Ghoshal, 1998). The duration of the collaboration between corporate sponsors and the PA varied. Periodical contract terminations forced the PA to engage in continuous sales cycles (i.e., engaging in sales activities towards corporates). Despite this volatile collaboration structure with the corporate sponsors with at least one change per year (see Appendix A5), the PA actively fostered engagement with different organizational units. The units usually included the innovation unit coordinating the PA's work, the functional units collaborating with the startups, and the management. In the investigated matchmaking round, the PA had already worked with all the corporate sponsors for more than two cohorts. Satisfying matchmaking results fueled that "more and more people got involved, and now we [the PA] also have many [partners] from the functional units […]" [SM]. With some corporate sponsors, the PA worked for a comparably

longer period of up to 13 cohorts and was perceived to have "a very close, trusting relationship" [SM]. While the duration of the collaboration impacted how the accelerator interacted with the corporate sponsor (e.g., professional versus personal), it was more the level of corporate experience with the matchmaking process and startup collaboration, in general, that seemed to drive the PA's impact on opinion building and decision-making (e.g., role of knowledgeable advisor versus facilitator and moderator; Table 18). A trusting relationship was not only observable at the organizational but mainly at the unit level—especially with the coordinating unit as well as several functional units the PA had repeatedly worked with.

Table 18: PA's Relationship to the Corporate Sponsor Organizations

Corporate Sponsor	Duration of Collaboration (before current cohort)	PA Link and Relationship to Corporate[11]	Evidence from Observations and Interviews
Corporate 1	3 cohorts	**Formal project sponsor:** functional unit **PA role in corporate interaction:** moderator; startup expert; knowledgeable advisor with significant impact on opinion building **Interaction/tone:** professional but friendly	Interview: "But now with the years, they treat us almost like internals when it comes to selection and when we're in the meetings. They value our opinion, respect it very much and are happy that we're managing that." [SM] Observation in evaluation meeting - Tone of voice between PA and [Corporate 1] is familiar and professional at the same time - Calm discussion, slightly emotional overtones on the part of [Corporate 1] for selected startups in case of different opinions between Unit 1 and Unit 2
Corporate 2	13 cohorts	**Formal project sponsor:** innovation management **PA role in corporate interaction:** facilitator and moderator; knowledgeable advisor nudging decision-making and developments **Interaction/tone:** rather personal and very friendly (especially with MD 1), but still content focused	Interview: "Same with [Corporate 2], they also see us as an important partner." [SM] Observation in evaluation meeting - Almost friendly relaxed mood (e.g., emphasis, by corporate manager, that the corporate team does not want to step on PA's toes by excluding to many startups, invitation or MD for joint dinner). - Clear focus on match of startup technology to collaboration area; common ambition to identify collaboration projects - PA less in "challenger role," only selective comments about startups

[11] Assessment of the relationship based on the author's observations of the meetings between the PA and the respective corporate sponsor.

Corporate 3	6 cohorts	**Formal project sponsor:** management **PA role in corporate interaction:** facilitator and moderator; limited impact on decision making **Interaction/tone:** mainly professional	Interview: "At [Corporate 3], even with the backup from the management, we usually have a central position, so to speak, in our partner organization. Which also brings a certain proximity [to the organization]." [SM] Observation in evaluation meeting - Meeting was very result-oriented (little discussion) - Feedback from [Corporate 3] to PA regarding the process/tools directly addressed - Mood constructive, good; very result-and efficiency-oriented, started with content - [coordinating unit] dominant compared to PA
Corporate 4	7 cohorts	**Formal project sponsor:** CVC unit **PA role in corporate interaction:** facilitator and moderator; knowledgeable advisor with selected impulses **Interaction/tone:** mainly professional	Observation in evaluation meeting - Tone of voice between PA and [Corporate 4] is familiar, at the same time professional - Formal talk-through of topics, few emotional nuances - Lively discussions about focus topics Observations in pitch event - PA takes moderating role: only introduces and closes event, few questions to the startups - Formal discussion between corporate units, few emotional overtones - Very noticeable that functional units emotionally defended the startups and even pitched together with them

"The PA is firmly anchored in this startup ecosystem. And you're right in the middle of it, which is very positive," MD 1 elaborated. Being affiliated with an entrepreneurship center, the PA program built on its relationships with downstream and upstream entrepreneurial support organizations. It cultivated continuous exchange to increase its visibility and startup sourcing effectiveness. Moreover, the PA reached out beyond its immediate network, by continuously engaging in diverse promotion and community-building activities such as public storytelling on diverse social media channels targeted at startups (e.g., participant startup success stories: "We are very proud of our current [cohort's] startup [name startup] for winning the [name competition] startup award" [OD]; see Appendix A7 for further public communication examples).

Despite the partially short collaborations, the PA obtained inside knowledge about the corporate sponsor organizations motivated by improving its service offering and retaining corporates as sponsors. It gathered insights into the corporates' specific innovation goals, their strategic agendas in collaborating with the PA as well as operational conditions (i.e., cognitive capital; Nahapiet & Ghoshal, 1998). A PA employee stated, "I know their [the corporates'] innovation topics. […] What new topics, confidential topics they are working on, which markets will be of interest to them in the future" [SM]. While running the matchmaking process for several cohorts, the PA gathered know-how about how to identify startups in the particular technology areas in which the corporate sponsors showed interest. Furthermore, insights about the corporates' strategic agendas helped the PA to tailor its services accordingly (e.g., "Corporate sponsor 1 has two goals, primarily to find topics for their own products and product lines. […] And the other goal, which is a bit of a blur at corporate sponsor 1, is production topics, where we have good access" [MD 1]; "They work with us because they really appreciate us and because we generate a lot of leads for them. But they're not that interested in the collaborations" [MD 1]). In the startup market, the PA leveraged this unique positioning and respective relationships to obtain a sufficient overview of the market and technology developments in general. Moreover, it gained insights about potentially relevant startups emerging in the market (e.g., "That's when the contact came through [connected entrepreneurial support organization]. [name MD] suggested [name startup] because they knew it from the ecosystem" [SM]).

Summary. In summary, over its six years lifetime, the PA established itself as a boundary organization by building up and communicating pre-cohort matchmaking as a core service towards asymmetric corporates and startups. Internally, it implemented new organizational structures and roles to deliver this service. Externally, it built up general expertise and connections in the ecosystem as well as know-how and relationships with concrete participant organizations (i.e., repeated corporate sponsors and applicant startups). Thereby it obtained the

necessary knowledge, structural legitimacy, and acceptance to act as a boundary organization.

Table 19 summarizes the evidence from my data.

Table 19: Evidence for "Establishing as Boundary Organization"

Aggregate Dimension: **ESTABLISHING AS BOUNDARY ORGANIZATION**

Second-Order Codes	Selected Evidence on First-Order Codes
Establishing pre-cohort matchmaking as core service	*Defining matchmaking as core service of the PA* "Where do I see our value contribution? In the identification of startups." [SM, Interview 1] "But what comes out a bit is that in any case [name PA] is still a service provider. Quasi for the corporate sponsors. And of course, we also try to... Well, to bring them the best startups, to deliver something, so to speak." [SA, Interview 1] *Re-orienting branding and communication* "[PA name], we get you investor ready" [OD, PA website year 2] "Why apply for [PA name]? Get professional market feedback by industrial experts, get access to world-class development tools, get an initial investment of €[sum], get your first enterprise customer." [OD, PA website year 2] "We make leading corporations and startups overcome innovation barriers by realizing mutual business opportunities." [OD, PA social media year 6]
Adapting structures and roles to new service offering	*Adapting existing team structures* "The third benefit is, [names PA MDs] I would probably say over the years they built an engine room, which has established itself that works and that can be measured [in terms of success]." [HEC 2, Interview 1] "We have rebuilt this platform so that people can evaluate together. We have broadened the number of sources that we include. So external partners, databases, so to speak in total where we search. […] We frontloaded the approach of how we define the [collaboration areas] a little bit, so we put in a lot more effort at the beginning. To involve not only an innovation area but ideally also strategy, the specialist area, and the one-pager. So before that, it was more like keywords, so we're looking in the area of Industry 4.0, and then we started to design the one-pagers to really understand: What is being looked for? What is not being searched for? What use cases? What geographies? Who have they already worked with? To just create a deeper understanding there. And not be on such a generic level. The thing that was already there [before the adapation] was the pitching events per company. So the final stage of selection. We took that further and looked at one or two partners and managed to make them a bit more public. So at least internally not only the decision-makers were there, but also ideally employees were allowed to participate in the pitch events. Which promotes the topic of working together with startups a bit culturally, breaking down the barriers a bit." [MD 1, Interview 1] *Adding new roles* "So we built up an [name scouting manager], the [name scouting analysts]." [MD 1, Interview 1]
	Employing a team with expertise in both worlds "And I have to say, I think someone like [name sourcing manager] or [name MD 1], who have a deeper insight into the startup scene, who already know many of these startups personally and know the founders, […]." [SA, Interview 2] "On the other hand, I would say that they also do good customer service—so [name

MD 1] and [name MD 2] overall. Already have this consulting-customer focus mindset [from previous employment in management consulting firms] and we go one step further. We're approaching new startups. We're getting feedback. We always offer a little bit more than we actually have in the contract and they notice that." [SM, Interview 4]

Learning from process repetition
"And that's how it is so often in life, when you've already done things several times, you don't always make the same mistakes. And that's one aspect, for an accelerator program, it's simply a wealth of experience that is simply available, which helps me to tackle precisely this topic without really having to build the whole thing from scratch." [HEC 2, Interview 1]
"[…] accelerator programs we see, also learn over time. This also means that guard rails are identified. The criteria, to identify and screen startups, are further concretized when gaining validation over several cohorts. And so that, in addition to the other aspect, there is also an ongoing learning process." [HEC 2, Interview 1]

Establishing connections by contributing to the ecosystem
"[PA name] has the strength of being an accelerator program that is embedded in the entrepreneurship ecosystem and in [city PA is located in]. So it simply has a very strong proximity and also connections to the network. That means the relevance of the accelerator program, whether it's corporate sponsors or, above all, how it looks to investors and mentors, is very, very strong." [HEC 2, Interview 1]

Building know-how and relationships with participant organizations	*Establishing relationships across corporate units* "That the employees get used to this, that the processes behind it are right. To be honest, our corporates need a while to get used to this. [...] How many people do I need to actually carry out the [collaboration] project? Until the accelerator is really known in the organization and they have to do some internal lobbying for it. Get the departments on board, and that simply takes time." [SM, Interview 1] *Understanding corporate innovation goals and operations* "We focus on long-term partnerships. I really know the organizations, we know the needs. We accompany the whole process – from defining the [collaboration areas] to 'which startup fits.' […] It is actually the holistic approach as an extended arm for the innovation area to find the most suitable startups." [SM, Interview 1] "Then let's do [Corporate 3]. [...] And there again primarily [a focus on] product topics. Collaboration, [research and development] topics. They make few investment deals and have now started about a year ago to tap the collaboration projects in retrospect also in the direction of investment. But this is really something downstream and there has not yet been an investment in a team that we have scouted. The focus is really on the product topics that come from the [research and development] departments." [MD 1, Interview 1] *Building on relationships to adjacent entrepreneurial support organizations* "Those are the three points of startup identification and then also, I think by being linked to a larger ecosystem you get more startups or a different kind of startups compared to a company scouting on its own. And then visibility and integration into such a network." [MD 2, Interview 1] "We are, as a platform with an entrepreneurship center behind us, close to the startups. We can deliver much better applications as a platform and if possible also the high potentials – for them our program is also interesting. We are more or less a platform, hence better applications." [SM, Interview 1] *Fostering acquaintance with startups in ecosystem* "Organizing startup week: #Founders – get ready for a week filled with corporate introductions and captivating insight sessions with #investors and #entrepreneurs from across Europe. We are hosting our very first [PA name] Alumni Week on

[date], and we are opening a few selected sessions for the public! Check out the agenda below & register for the sessions by clicking the links after." [OD, Social Media]

Understanding current startup ecosystem
"For example, there are such [difficult/small startup] markets, like Cyber Security one year ago. Now it has changed a bit with new technologies like Blockchain etc. A year ago I would have said, 'difficult, you actually need to look for established players.' It's not worth looking at startup solutions if you want to secure your [internet of things] devices at [name Corporate 1]." [SM, Interview 1]

4.3. Scaffolding: Anticipating Asymmetries Between Corporates and Startups

A core mechanism employed by the PA before the start of the actual matchmaking process was the *anticipation and foresightful management of differences and resulting hurdles that might arise in the case of direct coordination* between asymmetric corporate sponsors and startups. While boundaries need to be spanned in the collaboration between different organizations (Aldrich & Herker, 1977; Birkinshaw et al., 2017; Colman & Rouzies, 2019; Dahlander et al., 2016), spanning boundaries is especially complex for asymmetric organizations; for example, in my case, corporates and startups "are often two worlds apart" [MD 2]. Based on its experience in both worlds, the PA created a matchmaking process scaffolding that by design pre-empted the anticipated hurdles between the asymmetric organizational types. Building on its knowledge about the particular corporate sponsors' startup collaboration hurdles, it selectively modified the scaffolding to account for individual organizational needs as well as the conditions of the upcoming cohort. Employing a standardized scaffolding with pre-defined process steps, tools, and boundary objects (e.g., templates, contracts) allowed the PA to manage multiple participant organizations separated by external organizational boundaries. At the same time, a scaffolding ensured consistently effective matchmaking across cohorts and regularly changing sponsors. Anticipation is a new mechanism in boundary spanning literature, which so far described boundary spanning as task-focused (e.g., finding one startup for a specific problem; Monteiro & Birkinshaw, 2017) rather than systematic activity along a standardized process. The mechanism is also new for (corporate) accelerator literature as it describes for the

first time the considerations based on which accelerators construct their selection process and cohort structure (Cohen et al., 2019b; Shankar & Shepherd, 2019).

Anticipating general asymmetries between corporates and startups. General asymmetry between corporates and startups as organizational types increases the breadth of the boundaries and the complexity of spanning them. The organizations are asymmetric in size, scale, and resource base (Buckley & Prashantham, 2016) as well as experience level, culture speed, and level of professionalization, as my data suggests:

> Yes, because the worlds are completely different, always. [...] So, the experiences, the know-how, and also the framework for action, but also the culture of the two spheres [of corporates and startups] is very different. And in a corporate company, you have […] a very stable structure, but one that is also based on a division of labor and is very fragmented. On the one hand, resources, money, supply chains, and everything else that is needed to do business successfully are already there. […] Exactly, and on the other hand, you have the startups, which, as I said, tend to be greenfields. [HEC 1]

Their asymmetries broaden different boundaries, including boundaries to information exchange (i.e., syntactic boundaries), boundaries due to differences in interpretation (including technological) or semantics, and boundaries due to divergent interests (i.e., political boundaries; Carlile, 2004; Kellogg et al., 2006). The broadened boundaries lead to hurdles in the initiation of collaborations, especially from the startup perspective. Exemplary hurdles are limited process speed, lack of process stability, and the uncertainty of process outcomes. From the perspective of the PA, collaborations between corporates and startups often do not come to pass if the boundaries are not spanned and associated hurdles are not surpassed:

> And that's where things often go wrong. It also happens with other relationships in established companies. But let's say that in the startup environment, where there is even more uncertainty and even more ambiguity, it's often even more blatant than in the rest of the business environment. And that's the case in all stages of collaboration, so do you come together at all, to a contractual agreement? [HEC 1]

Asymmetries in operational and industry experience, culture, language, speed, and uncertainty about the project deliverable as well as the process between corporates and startups first

manifested in procedural hurdles on the corporate side when directly initiating collaborations. Examples are "the time frame that usually already goes wrong when they do something like this themselves" [SM], difficulties in "find[ing] your users or your sponsor in such a huge organization" [SM], or the lack of process transparency for the startups. Second, the asymmetric organizations' interaction usually bears complexity due to "language problem[s]" [MD 2] and the corporate tendency to "look down, at least [interact] not yet on eyes level" [SM]. Table 20 describes the asymmetries and hurdles the PA employees experienced throughout the work as a boundary organization.

Table 20: Asymmetries and Resulting Hurdles in Direct Coordination Between Corporates and Startups

Organizational Asymmetries Between Corporates and Startups		
Asymmetry	**Explanation**	**Selected evidence**
Experience level (especially in the respective industry)	Different levels of operational and industry experience on an individual (employee/founder) and organizational level	"Exactly, and on the other hand, you have the startups, which, as I said, tend to be greenfields. The majority of founders don't have an industrial background but are starting up for the first time—in this industry for the first time. So these are not old hands who have already done this 20 times. They have to run up the learning curve to build up their own company. But they also have to learn to understand what makes the established companies tick. And in some cases, there are many startups and many founders who have never worked in an established company." [HEC 1]
Organizational culture	Different organizational cultures shaped by among other risk aversion, speed (e.g., Weiblen & Chesbrough, 2015)	"[…] and also the framework for action, but also the culture of the two spheres is very different." [HEC 1] "Because startups and corporates often talk past each other or don't quite understand what makes the other tick. Because there are often two worlds." [MD 2]
Decision-making and operational speed	Different organizational conditions due to size, scale, and resource base (e.g., hierarchical complexity, process formalization) impact the decision-making processes or project execution speed (e.g., Buckley & Prashantham, 2016; Kalaignanam et al., 2007)	"It's always a huge effort and a very long and complicated process for a corporate to get projects like this." [SM] "You have a very stable structure, but one that is also based on a strong division of labor and is very small-scale. On the one hand, of course, resources, money, supply chains, and everything else that is needed to do business successfully are already there. On the other hand, of course, it's also a legacy that you're kind of dragging around with you. Exactly. And the issue of decision-making, taking responsibility, is always very distributed in the organizational structure, incredibly difficult." [HEC 1]

| Uncertainty about project deliverability and quality | Startups as new organizations usually face uncertainty in their ability to deliver the desired product timely and in the quality (non-minimum viable product) expected | "But let's just say that in the startup environment, where there is even more uncertainty and even more ambiguity, it's often even more blatant than in the rest of the business environment." [HEC 1] |

Common Hurdles in Direct Coordination between Corporates and Startups		
Asymmetry-related collaboration hurdles	**Explanation**	**Selected evidence**
Process: initiation/process speed	Slow initiation of collaboration due to slow processes/ decision-making in corporate organizations	"That also has to do with the typical pitfalls of startup collaborations. So, I think what's important for them is this time frame, which usually goes wrong when they do something like this themselves. [...] But I think it's important that there's not too much time. Because you have to adapt to the speed of the startups. [...] Because the priorities change at the startup. They may have to onboard 20 new customers overnight and no longer two. Then there may be a financing round and then their priorities change. It shouldn't take two months from selection to launch." [SM]
Process: process stability and transparency	Unclear outcomes of corporate-startup negotiations from a startup perspective and untransparent process (high uncertainty/risk of resource waste)	"That they know exactly how the process is. When the process starts, how long the process is when they get the payment." [SM] "A PA integrates a startup in a completely different way than the corporation, which otherwise runs loosely. This means that the touchpoints with the customer are clearly defined, the criteria for talking to each other are clearly defined, and the way in which you cooperate is also clearly defined. So in the example of [PA name], it is quite clear that there are fixed dates where they bring in corporate, from selection, from selection day to demo day. And in addition, there is a clear commitment to the [collaboration project]." [HEC 2]
Process: identification of suitable project sponsor and/or user	Navigation through corporate organization and identification of suitable project partner unit challenging, also partner unit might not have a decision-making/sponsorship mandate	"Then you're... We guarantee that the right people will look at the applications. So to find your users or your sponsor is very difficult in such a huge organization." [SM] "The fifth criterion is the topic of employee support, which means you must have a clear contact person in the company who addresses the topic. Otherwise, you simply don't have this interface to the area, which in turn would also be connected to the promoters, i.e., the promoters in the company. [...] In any case, you need a fixed contact person, so that is described in great detail with case studies in the company path." [HEC 2]
Process: startup selection approach and criteria	Corporate lack of experience with an appropriate startup screening and selection process structure and criteria for startup selection (e.g., in	"So first we have to really teach them with our understanding of startups and corporates that it's [lack of revenues] not a bad sign. With foresight on the vision [is essential] and that they still convince investors and you can't measure them now on revenues or metrics that you would use with established companies? You can't look at them like a

	comparison to suppliers)	normal supplier that [Corporate 1] would have." [SM]
Process: collaboration terms and power distance in negotiation	Complexity in negotiating mutually acceptable/beneficial collaboration project terms and conditions due to different expectations or power distance (e.g., Katila et al., 2008)	"And it is in all stages of cooperation, so do you come together at all? What are all contractual agreements? What are the economic conditions? And then when delivering." [HEC 1] "Lack of understanding of aspects that are important for startups. I would not have to explain to an [Corporate 2, due to long-term cooperation with PA] that exclusivity is very difficult for a [collaboration project]. To other new partners, it is." [SM]
Interaction: communication/language problems	Complexity or mutual misunderstanding due to different use of language or underlying assumptions in communication	"It's often as banal as a language problem. We recently experienced this with [name unrelated corporate], again as an example, where we also mediated, where both sides first had to make each other capable of speaking. So if I have already done this a hundred times as a PA, then I speak the correct language on both sides. I can communicate better and thus also bring them together." [HEC 1]
Interaction: corporate self-perception/looking down on startups	Corporate tendency to interact with limited respect/display power distance or not work on eye level with startups	"Until there is a little understanding that even a startup does not immediately rush into every project just because there is a big name on it. So with companies that are starting, there is still a bit of a looking down, at least not yet on eyes level, and at least not the understanding that you have to fight a bit for the startups." [SM]

Anticipating partner-specific asymmetries for the upcoming cohort. Building on its positioning with the specific participant organizations, the PA anticipated challenges that might arise in the identification of startups or interaction between the single corporate sponsors and applicant startups participating in the upcoming cohort. Having worked with the specific corporate sponsors for at least two cohorts, the PA considered each corporate's particular hurdles when sourcing startups. The sourcing manager elaborated on a corporate sponsor:

> For example [name corporate 1] really [has] no [gut] feeling, for example, if a startup doesn't have any revenues yet, they take that as a bad sign at the beginning. […] So first we really have to teach them with our understanding of startups and corporates that it's not a bad sign. […] You also can't look at them like a normal supplier that [name Corporate 1] would usually select. [SM]

Hurdles arise, for example, due to a lack of experience with startup sourcing and selection (especially selection criteria or cooperation terms); insufficient internal structures; limited network embeddedness of the innovation unit into the organization; and limited openness,

commitment, or capabilities of corporate functional units. Hence, potential hurdles were anticipated on the organizational level as well as on the unit level: "I know that it's not that attractive for them. […] Yes, but I think [name Corporate 1, region A] and [name Corporate 1, region B] operating with an information technology unit, is super difficult" [SM]. Whereas all corporate sponsors were still facing hurdles in startup collaboration, the PA observed a learning effect for long-term corporate sponsors. The PA perceived that long-term sponsors were naturally more process savvy but also obtained general skills in startup collaboration, which reduced the hurdles to be anticipated by the PA. One MD described:

> Those who have been working with us for longer are among the most experienced in their industry when it comes to working with startups. And they now also give us completely different tasks and work much more efficiently with startups themselves. So it's a stark development, what you see there over two, three, four years. [MD 2]

Launching matchmaking process scaffolding to anticipate hurdles. To systematically match suitable partners for collaboration projects, the PA designed a matchmaking process scaffolding that reflected anticipated needs and pre-empted anticipated hurdles between corporates and startups as asymmetric organizations in general. A head of the entrepreneurship center compared the accelerator to directly managed collaborations:

> An accelerator integrates a startup in a completely different way than the corporation, which otherwise runs loosely. This means that the touchpoints with the customer are clearly defined, the criteria for talking to each other are clearly defined, and how you cooperate is also clearly defined. So in the example of [PA name], it is very clear that there are fixed dates where they bring in corporate, from selection, from selection day, to demo day. [HEC 2]

However, the scaffolding remained sufficiently flexible to account for the specifics of each matchmaking round, including emerging needs and specific hurdles of the participating corporate sponsors as well as the unique situational conditions (e.g., number of corporate sponsors, collaboration areas). The design of the process scaffolding reflected the anticipated general needs and hurdles as well as the PA's expertise in scouting and selecting suitable

startups in dedicated technology fields—this is referred to as architectural knowledge in literature (Currie & White, 2012; Kislov et al., 2017). The process scaffolding followed a stage gate structure that enabled a goal-oriented information exchange and interaction between corporate sponsors and applicant startups for a mutually informed assessment of the match. The sourcing manager described the scaffolding:

> But the basic concept, [collaboration area], we scout, shortlist, interviews, pitch event—that comes from us. It's a proven concept and we implement it in this form. So if someone were to say, "I don't need an interview, I'll take a candidate I like best and sit down with him for 2 hours," we'd say, "No. That is not the goal of the exercise." [...] So there, our approach is the one we enforce with the corporates. [SM]

Scaffolding design elements reflecting general needs and pre-empting anticipated hurdles are the duration and timing, stage-gated structure (multiple steps and clear decision formats), clear involvement of corporate units, and the collaboration projects as a stable outcome (Table 21). General corporate needs are mainly reflected in the clear structuring of the process steps and decision formats as well as the split of tasks between corporate units and PA. The stage-gated startup-meeting structure, moderated evaluation meetings between the corporate units and the PA, and professional software tools enable the structured involvement of corporate decision-makers for startup selection (e.g., corporates comment on the software tool: "Super workflow with the ability to email questions to others directly from the system"; "platform is clear and intuitive"). Additionally, the roles of the PA as process owner and the corporate units (e.g., innovation unit as coordinator, functional units as technical experts, and collaboration project partners) are pre-defined, which enables an effective process execution.

To lower the application barrier for high-potential startups, the matchmaking process also accounted for the anticipated needs of young and flexible organizations. For example, high decision-making speed was crucial for startups but was a common hurdle in direct corporate-startup interaction. To address this hurdle, the PA enforced a tight process timeline from application to project start. The sourcing manager emphasized the relevance of speed: "That's

really six months of preparation from the [collaboration areas] to selection—not quite. But I think it's important that there's not too much time. Because you have to adapt to the speed of the startups. […] Because the priorities change with the startup" [SM]. Additionally, the direct access to corporate decision-makers and functional units helped startups overcome the common hurdle of navigation in and access to corporate organizations.

In contrast to more individualized matchmaking processes for single sponsors (Shankar & Shepherd, 2019), using a process scaffolding, tested over several matchmaking rounds, benefited the effective management of multiple changing participant organizations. Running the matchmaking process for several corporate sponsors in parallel multiplied the number of potential startup partners in diverse collaboration areas—initially, approximately 1,500 startups needed to be approached and 400 applications need to be evaluated. Therefore, standardized process elements backed by software tools were crucial to ensure that the time investment and cognitive costs (Carlile, 2004) for the PA and the corporate sponsors remained manageable.

Table 21: Process Scaffolding Elements Addressing Asymmetries Between Corporates and Startups

Process Scaffolding Element	Configuration of Process Element	Addressed Needs or Collaboration Hurdles
Strict pre-defined process duration and timing	Six-month process timeline Time-boxed process steps	**Hurdle (startup view):** initiation/process speed
Pre-defined process steps and decision formats with corporates (see Figure 4) including public communication towards startups	Initiating: collaboration area definition, process preparation, setup of startup evaluation tool Matchmaking: startup sourcing by PA, (pre)-selection of applicants by PA and corporates, startup interviews, startup pitch event, multiple decision meetings between PA and corporate Phasing out: contracting with startups, handing over project responsibility to corporate Implemented software and digital tools supporting the application and startup evaluation process	**Hurdle (startup view):** process stability and transparency **Hurdle (corporate view):** startup selection approach and criteria **Needs (corporate view):** structured involvement of decision-makers
Pre-defined split for assignments and allocation of resources (esp. time) between corporate units and PA	PA as process owner, coordinating corporates and startups Innovation units as coordinator of matchmaking process within corporate organization and interface to organization	**Hurdle (startup view):** identification of suitable project sponsor/user **Needs (corporate view):** structured involvement of decision-makers

	Functional units as collaboration project partners for startups participating in matchmaking process	
Pre-defined collaboration project as process outcome	Collaboration projects between corporate sponsors and startups, with a pre-defined number of projects per cohort	**Hurdle (startup view):** collaboration terms and power distance in negotiation
	Pre-defined terms of collaboration including timeline, financial scope, legal terms	

While following a proven matchmaking process scaffold, the process was adjusted by the PA to meet the specific needs of the corporate sponsors, to pre-empt their startup-interaction hurdles, and to reflect the unique situational conditions of the upcoming cohort. Regarding the reflection of corporate needs, the sourcing manager said:

> For example for [name Corporate 1] samples have to be sent before if it is a food-themed startup. And we adjust little things like that. Or we say we won't do a pitch event with the management, but a smaller meeting, because that fits better into the [corporate's] framework. We adapt to that." [SM]

Despite implementing voiced corporate requests, the PA foresightfully managed potential hurdles in sourcing relevant applicant startups for specific corporates or in specific collaboration areas. Process scaffolding adjustments to the conditions of the individual cohorts encompassed measures to account for the continuously changing number of corporate sponsors. In the matchmaking process under observation, the number of corporate sponsors decreased due to a short-term contract suspension. Therefore, the PA added a collaboration area not supported by a corporate sponsor to increase the likelihood of reaching the optimal number of startups for the cohort. While the startups still had to apply at this point, the PA was already aware of the technological fields the corporate sponsors operated in as well as some potential startup collaboration areas for the projects. This tactic allows the PA team to pre-empt startup shortages by adjusting the subsequent startup sourcing approach, for example:

> [We] are more concerned with [information technology] topics that are not so, let's say, directly associated [by potential applicant startups] with [name Corporate 3]. Then it's more difficult to get good applications in those fields. […] So if the startups can't

identify with it, then the quality is lower. […] And then again, it's a big, or a small startup market. [SM]

Summary. In summary, the PA addressed the collaboration hurdles commonly arising due to organizational asymmetries between corporates and startups as different organizational types as well as the concrete participant organizations by anticipating them before the actual matchmaking process began. By employing a standardized scaffolding with pre-defined process steps and boundary objects that circumvented the anticipated hurdles, the PA effectively managed multiple participant organizations and consistently facilitated matchmaking across cohorts and changing sponsors. Small adjustments of the scaffolding allowed the PA to account for individual needs and the current circumstances of the cohort. Table 22 summarizes the relevant evidence.

Table 22: Evidence "Anticipating Asymmetries"

Aggregate Dimension: **ANTICIPATING ASYMMETRIES BETWEEN CORPORATES AND STARTUPS**

Second-Order Codes	Selected Evidence on First-Order Codes
Anticipating general asymmetries between corporates and startups	*Anticipating different needs of asymmetric organizations* "Corporates have optimized business models, established operations, etc.; typically they can lose more if they move too fast. Startups have nothing to lose, they move fast; think of days and weeks; founders are incentivized by increasing company value and most of the founders have never worked for a corporate (and vice versa). There is a lack of mutual understanding. For a collaboration program, many things need to come together, not only in the same industry: tech fit, fit in mid- and long-term vision, fit between personalities engaged in the program and there have to be enough resources on the startup and corporate side. It's a miracle if both sides find together." [MD 1, OD public talk via Youtube] "The majority of founders don't have an industry background but are starting up for the first time – in this industry for the first time. So these are not old hands who have already done this 20 times. They have to run up the learning curve to build up their own company. But they also have to learn to understand what makes the established companies tick. And in some cases, there are many startups and many founders who have never worked in an established company. And the worlds are so different. And there are just different expectations, experiences, and frameworks that come together." [HEC 1, Interview 1] "From a startup perspective, [PA name] solved it [the program design] simply super attractively: You apply, and otherwise have no more hassle. Intellectual property and money are all somehow clarified and then it ends again at some point. The deal for startups is simply extremely good." [HEC 1, Interview 1]

	Anticipating potential hurdles in initiating collaborations
	"In other words, the differences in the organization between startups and corporates. They simply lack mutual understanding completely." [HEC 1, Interview 1]
	"If you want to convince [name Corporate 4] as a startup, it can take 1.5 years. Then you're there... We guarantee that the right contacts [in the functional units] look at the applications." [SM, Interview 1]
Anticipating specific asymmetries between participant organizations	*Anticipating sponsors' challenges in startups interaction*
	"For example, [name Corporate 1] did not have a good image, so when I talk to them [the startups] and say, why don't you apply, we can set up a [collaboration project] at [name Corporate 1], they [the startups] are critical at first, because [name Corporate 1] is known for dealing harshly with suppliers and pushing down prices. And of course, they [the corporate sponsors] have an advantage when you work with us, because the startups know that it is a good program." [SM, Interview 1]
	Anticipating issues in identifying matching startups
	"It is always the smallest common denominator between [name Corporate 1 legal entity A] and [name Corporate 1 legal entity B]. It's always a little bit difficult. Because they actually have little overlap in their goals of what they want to achieve. [...] These are different departments that support after this [the PA program] at [name corporate legal entity A] it is the product innovation in [name country]. That simply means launching new products on the market. And at [name corporate legal entity B] international, so worldwide." [MD 2, Interview 1]
Launching matchmaking process scaffolding to anticipate hurdles	*Designing matchmaking scaffolding to prevent general asymmetries*
	"Process highly professionalized, most professional process among [national] accelerators." [MD 1, informal exchange]
	"Step 1: Identify and approach startups; Step 2: Screen and select startups; Steps 3–*n*: Several alignment steps with corporate sponsors." [MD 1, informal exchange]
	"Process flow, criteria, etc. highly standardized and systematized leading to 'data based' decision from PA side (gut feeling and corporate preferences come later into play)." [MD 1, informal exchange]
	Adjusting scaffolding to reflect anticipated specific needs & hurdles
	"Each corporate shows different preferences and behaviors concerning startup selection and engagement in follow-up activities with startups – we will see significant differences along the selection process." [MD 1, informal exchange]
	"Because the pitch event has a different framework. At [name Corporate 4] it will be like a meeting in front of [the PA] and the five [name Corporate 4] people. And at [name Corporate 1], it's called out internally. We even craft a landing page where we embed the video. We work with Stream Lab, so it's really... So we stream that through Youtube and then embed that on their landing page. Just for [name Corporate 1], so then all of the [name Corporate 1] colleagues can join in. [...] The other day we had [name television show] on site as a television crew, and they interviewed [startup name]." [SM, Interview 3]

4.4. Matchmaking Process: Structuring Matching

Throughout the individualized matchmaking process, the PA *structured the identification of corporate-startup matches across different corporate units and between corporates and startups* spanning internal and external organizational boundaries. As a head of the entrepreneurship center described, the appropriate implementation of the matchmaking process is crucial for the success of potential corporate-startup collaboration projects:

> Exactly, and that is this process, this [matchmaking] process. And at the same time, it is also a commitment process on the part of the partner company and the department. This must be incredibly well moderated in order to make it resource-efficient, but also in such a way that it [collaboration project] has a good chance of being implemented. [HEC 1]

Employing dedicated communication structures and tools (i.e., boundary objects; Carlile, 2004), the PA uncovered partially novel collaboration opportunities for corporates and startups, pre-evaluated the applicant startups, and brought the asymmetric participant organizations together in structured meetings. Thereby, the PA supported the participant organizations in evaluating the match. By doing so the PA bridged multiple organizational boundaries (see Section 4.1), including information processing (i.e., syntactic) boundaries that the PA surpassed by enabling an initial connection and information transfer (Carlile, 2002; Kellogg et al., 2006). Furthermore, interpretative (i.e., semantic boundaries) could be surpassed by translating and establishing a shared language (Carlile, 2002; Kellogg et al., 2006; Rosenkopf & Nerkar, 2001). Finally, the PA helped to surpass political boundaries by facilitating the alignment of divergent interests (Carlile, 2002; Kellogg et al., 2006). While structuring generally happened along the matchmaking process scaffolding, single elements were adjusted to reflect the sponsors' needs or conditions in the current cohort. Structuring integrated several mechanisms broadly discussed in the boundary management literature.

Uncovering (additional) collaboration project opportunities. The PA actively facilitated the recognition of dedicated (additional) collaboration opportunities by both corporate sponsors and applicant startups to be realized in collaboration projects parallel to the upcoming PA cohort. This two-sided mechanism was possible because the PA acted as a boundary organization positioned in and knowledgeable about both worlds as compared to organizations affiliated with only one of the participant organizations (e.g., Monteiro & Birkinshaw, 2017; Shankar & Shepherd, 2019). The sourcing manager described the uncovered opportunities:

> I think there are simply often topics that many startups don't even know that a corporate is working on. [...] But I do believe that we offer them new perspectives on the corporate sponsor and suddenly cooperation opportunities appear before them that they didn't know about before. [SM]

Initially, the PA triggered the organization-internal mobilization (Colman & Rouzies, 2019) of functional units as partners for a collaboration project. Colman and Rouzies (2019) subsume actions to convince, prepare, and assemble relevant stakeholder groups within one organization under the mobilizing mechanism. The PA engaged in an acquisition process together with the coordinating unit and arranged kick-off meetings for the matchmaking process. With the mobilized functional units, the PA engaged in a co-development process to describe startup collaboration areas for joint projects. The collaboration area descriptions served the PA as guidelines for the matchmaking process. To formulate the descriptions, the PA shaped the corporate units' initial problem formulation by providing templates to describe their collaboration or innovation needs. To comprehensively depict the corporates' needs, the templates specified related technologies, application areas, and startup examples (see Appendix A6). In a manner similar to the transformation process described by Monteiro and Birkinshaw (2017), the PA transformed the collaboration area description in a discussion and problem re-formulation process between a corporate's startup scouting unit and the unit issuing the scouting request. To transform the collaboration areas, it leveraged its startup expertise to reflect whether

the described innovation need fits "a startup market or one should better not to look for startups?" [SM]. The joint specification and reformulation of the given problem or collaboration area contributed to the identification of more novel or creative solutions (Tippmann, Sharkey Scott, & Parker, 2017). More than 15 collaboration areas were identified and transformed jointly with the corporate units. A major share (approximately 80%) of the collaboration areas was focused on digital technology startups such as cyber security, consumer digital, or enterprise software.

The collaboration areas enabled the sourcing of startups that would broaden the corporates' product portfolio with digital products or complement current products, enable new customer-facing services, improve internal production processes or workflows, or enable the companies' reaction to societal or environmental trends (see Table 23). The distance or proximity of the startup technologies to the technologies applied or developed by the corporates in one of their business areas varied (Lopez-Vega et al., 2016; Rosenkopf & Nerkar, 2001). Some technology products fit the corporate portfolio and are therefore proximate to the corporate knowledge basis (e.g., Corporate 1 operates in retail and aimed to enrich its product portfolio with sustainable startup products), whereas other technologies complementing current corporate products only suggest limited corporate competencies in these areas (e.g., Corporate 4 operates in household appliances and aimed to supplement its product portfolio with cleantech startups). Finally, products easing internal processes are based on the corporate sponsors' company websites and information gathered in the observation of meetings, not a core technology competence within the corporate organization. Hence these products are rather distant from the corporate knowledge basis (e.g., Corporate 4 operates in household appliances and aimed to improve internal knowledge management with enterprise software startups). While the corporate partners operated in focus industries, the startups commonly worked on technology solutions applicable across industries (e.g., enterprise software, cyber security).

Those collaboration areas are directly translated into a non-technical language to bridge interpretative boundaries towards different actors—namely startups and the PA's matchmaking team. The PA's translation resembles the boundary spanning mechanism identified by Carlile (2002), which is described as the construction of shared meaning or resolution of discrepancies in meaning. Examples for translations include the simplified and non-technical collaboration area descriptions, such as "Sustainable, tech-driven products that provide social and environmental impact during the whole product life cycle (esp. after usage); goals to be achieved: products that contribute positively to the health and wellbeing of our community and planet" [ID] (see Appendix A6 for sample collaboration area description).

With the transformed collaboration areas translated into startup-friendly language, the PA engaged in an active matchmaking process to scout approximately 1,500 startups matching the collaboration areas (see Table 13). For corporates, scouting relevant collaboration partners was difficult due to the early-stage startups' sometimes distant technology, a common lack of industry focus—implying a different sourcing routine compared to usual suppliers—and the limited public record (Lopez-Vega et al., 2016; Rosenkopf & Nerkar, 2001). In particular, early-stage startups needed to be approached in the right development stage, for example, to shape product development into the desired direction or pre-empt potential exits. The PA leveraged its expertise to identify early-stage startups operating in particular technology areas or, from a corporate perspective, in partially distant search spaces (Lopez-Vega et al., 2016; Rosenkopf & Nerkar, 2001). To identify startups fitting the collaboration areas, the PA employed diverse mechanisms building on its embeddedness into the startup ecosystem, including the personal exchange with up- and down-stream intermediaries in its network, an independent search process, and the involvement of dedicated third-party scouting providers. The sourcing manager described the search for startups:

> We then search in [online scouting] databases, we go to conferences and talk to the venture capital arm about their deal flow, we do web research, and we also have service providers who work for us and crawl the internet. And we first generate leads, exactly, 100s to 1,000s. [SM]

Concerning technology areas scouted in previous matchmaking processes, the PA knew which awards, events, and databases are relevant.

Table 23: Scouted and Applicant Startups per Collaboration Area

Corporate Sponsor	Collaboration Area	PA Scouting Target, #	Scouted Startups, #	Applicant Startups, #
Corporate 1	Innovative tech process solutions	100	120	45
	Sustainable process solutions	250	120	45
	Sustainable products to enrich portfolio	250	250	30
	Sustainable production material	200	60	30
	Sub-total		*550*	*150*
Corporate 2	Innovative tech products to enrich portfolio	150	80	20
	Innovative complementary tech products	50	40	10
	Other			15
	Sub-total		*120*	*45*
Corporate 3	Innovative tech process solutions for administrative processes	50	60	15
	Innovative complementary tech products	100	120	10
	Innovative tech products to enrich portfolio	100	80	10
	Innovative tech process solutions for production	100	80	20
	Innovative complementary tech products	100	60	20
	Other			30
	Sub-total		*400*	*105*
Corporate 4	Sustainable complementary tech products	100	70	20
	Innovative tech process solutions	100	90	40
	Innovative tech process solutions for administrative processes	100	100	20
	Innovative tech products to enrich portfolio	100	90	15

Innovative tech products to enrich portfolio	100	100	10
Other			5
Sub-total		*450*	*110*
Sum	**~2,000**	**~1,500**	**~400**

Previously scouted startups were actively approached to promote the detected collaboration opportunity with one of the corporate sponsors, for instance via an e-mail contact inviting the startups to apply for the accelerator cohort (see Appendix A12 for example e-mails):

> I came across your website while screening potential startups for our new cohort. Your startup looks like a great fit for our corporate sponsor [name corporate] in the field of [collaboration area]. We would be very happy if you considered applying for the upcoming [cohort]. [OD]

The accelerator reported that startups were often not aware of the collaboration opportunities with the corporate sponsor in general or the corporate's need in a particular collaboration area (e.g., see citation above: "I think there are simply often topics that many startups don't even know that a corporate is working on" [SM]). Therefore, the PA uncovered the collaboration opportunity for many startups by approaching and promoting it to them. Since encouraging high-potential startups to apply was complex (Shankar & Shepherd, 2019), diverse channels and elaborate messaging were used to convince startups about the attractiveness of the opportunity. The use of communication channels was adjusted depending on the expected fit of the startup to the collaboration area. While a broad, general communication over social media was implemented to attract unsolicited applications and a standard mailing was sent to approximately 1,450 startups, approximately 50 high-priority startups were approached via the personal network of the PA employees or at least were contacted multiple times on different channels (e.g., social media, mailing, phone).

Pre-selecting applicant startups by PA. Whereas corporate sponsors eventually decided whether to engage with a startup in a dedicated collaboration project, the PA pre-selected the

approximately 400 applicant startups to limit the corporate sponsors' time investment and the likelihood of wrongfully rejecting relevant startups in the subsequent decision-making process. The sourcing manager described: "We help in the selection because they obviously are also not capable" [SM].

In the first step, the PA's matchmaking team "tag[ed] the [startup] applications according to the collaboration areas to determine for whom [corporate sponsor] they are relevant" [SM]. It checked whether the solution and technology fit with the corporates' pre-defined collaboration area to avoid "applications slip through" [SM] the process. In the second step, the team evaluated the startup applications following a set of criteria, including having a "Super pitch deck, strong team, with high tech expertise for example, low to medium funding, interesting fit for a [collaboration area], […]" [SA]. The PA was only able to assess the fit of the startup to the collaboration area from an outsider's perspective based on the jointly developed templates. Therefore, the PA built on evaluating criteria more common for venture-emergence-focused PAs or other entrepreneurial support organizations' evaluation processes (compare e.g., Aerts et al., 2007; Becker & Gassmann, 2006b; Shankar & Shepherd, 2019): fit of the startup's maturity level to the program, current performance and future potential of the startup, and perceived motivation and/or professionality reflected in the quality of the application (see Table 24). To provide the corporate sponsors with guidance before they start their evaluation process, the matchmaking team summarized its rating numerically and wrote qualitative comments in the startup evaluation tool.

Table 24: Startup Evaluation Criteria

Category	Evaluation and Selection Criteria[12]	Exemplary PA Ratings (written comments in startup evaluation tool)	Exemplary Corporate Ratings (written comments in startup evaluation tool)
Collabo-ration project fit	Fit of startup product to pre-defined corporate collaboration area	Professional approach with potential fit to [collaboration area] […].	In my opinion, this does not fit with [name Corporate 1]. No sustainability [collaboration area] reference. Can be pursued outside the program.
	Startup's collaboration project suggestion and feasibility in corporate organization	Startup proposes concrete [collaboration project], which can probably be developed remotely. The [collaboration project] proposal is not particularly elaborate, but the sensor technology behind it could be interesting.	Employee coordination unit: You could take a look at it, but I can't quite imagine how we can test it as [collaboration project]. Employee functional unit: Currently the basis is missing, but piloting will be possible from quarter three [year of collaboration project], as far as I know. So the [collaboration project] idea description is very muddled, nebulous, and meaningless—it just goes round in circles.
Timing/fit to program	Startup stage and funding	Find it interesting, but are still very early—industrialization status questionable. Founded in [year] and >[XX] million funding, so might already be a bit too far for [name PA].	Exciting, but too early—can be kept on the radar.
Perfor-mance and potential	Scalability of startup	Nice, but not scalable, since "service."	Anti-snoring solution; only smaller fit with the [collaboration area] and rather a niche product.
	Novelty of startup product	The raw material is not so new, and does not stand out from the hundreds of solutions in the market.	The startup makes a good impression, but the topic is not really new anymore. I, therefore, do not find it suitable.
	Unique selling point of startup product	[…][unique selling point] lies in easier and more comfortable and analysis via machine learning algorithms […]. […] The [unique selling point] is not clearly evident to me and therefore cannot stand from comparable solutions.	I don't find much [information] about technology and in my opinion, the [unique selling point] is the system solution. […] Rather not interesting.

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[12] The listed categories and criteria were not formalized (i.e., written down as a checklist) by the PA, but consolidated from interviews as well as the written ratings in the startup evaluation tool.

	Traction (esp. with reputable customers)	The collaboration with [name reputable software company] for the elaboration of neural networks and machine learning algorithms is worth noting. The startup already has its first well-known customers such as [name reputable retail company] and [name reputable mobility provider].	[business to consumer] solution is basically interesting. Need to take a closer look. Revenues seem very low ($[XX] this year?). Phone call useful.
	Team	No customers yet, but very experienced founding team. Strong founding team with interesting academic background. The startup is a spin-off of the University of [name].	Very sympathetic team and the videos look promising. Could be exciting for a [collaboration project]. I see it as a very exciting candidate for our "benchmark" in research.
Perceived startup motivation/ profess-ionality	Professionality of documents	Good pitch deck and overall good application. The application itself, however, is only incompletely filled out, there is no information about the team.	Make a professional impression.
	Personal relations or recommendations from network	Current [cohort] #[XX] Startup; a successful project with [Corporate 2]; recommendation for a project outside [PA name].	Has already held a first interview between the [corporate innovation unit] and [startup], because [startup] approached us. Application is interesting […].

Structuring corporate-startup interactions. Throughout the matchmaking process, the PA structured the interaction within (i.e., the corporate organization among corporate units) and between the participant organizations (i.e., corporates and startups) to facilitate the mutual assessment and identification of collaboration projects. While the process scaffoldings to manage the interaction (e.g., meeting types, timelines) were consistent for all corporate sponsors, single elements such as meeting formats or configuration of software tools were modified to serve the corporates' explicitly voiced or anticipated needs. As compared to internal or affiliated entities adapting the coordination processes to the needs of the (a) stable parent organization(s) (e.g., Monteiro & Birkinshaw, 2017; O'Mahony & Bechky, 2008b; Shankar & Shepherd, 2019), balancing standardization and individualization was crucial to manage the matchmaking process effectively for multiple, changing corporate sponsors (i.e., one to three changes of corporate sponsors per cohort).

Structuring corporate-startup interactions was complex because the PA worked with different units within the corporates' organizations (including a coordinating innovation unit and several functional units). To structure the assessment of applicant startups across the different corporate units, the PA provided a startup evaluation tool where each decision-maker, "really from functional unit to innovation management, so even the [chief digital officer] from [name Corporate 2]" [SM] could view and evaluate the startups. The startup evaluation tool aggregated information about each startup using pre-defined categories and hereby provided a standardized scheme to compare and evaluate the applicant startups (e.g., general startup information including geography, team size, revenue; product, technology, and business model; startups' collaboration partner preferences; previous experiences with entrepreneurial support organizations). Therefore, the startup evaluation tool functions as a boundary object (see Carlile, 2004) that represents knowledge and information in a form that can be directly processed by the other party: corporates to derive their evaluations as well as the PA to provide their own and process corporate evaluations for the next process step. Using the startup evaluation tool with the PA's pre-evaluations as a basis, some corporates only assessed top-rated startups, while others evaluated all applications comprehensively. Additionally, the PA discussed the written startup evaluations in dedicated meetings with the coordinating and functional units.

As coordinator and moderator of different exchange formats between applicant startups and sponsoring corporates, the PA steered the frequency and format of the interactions. Following the proven process scaffolding, the exchange formats encompassed initial one-on-one online meetings between the startup and the corporate and a final pitch event. The sourcing managers described the purpose of the single steps in the meeting cascade (see Table 25):

> But we want them [the corporate sponsors] to get a personal impression in the interviews, that they look at different solutions, that they maybe look at similar solutions

to find out the differences. Exactly, then we want another final event where we get the management on board. [SM]

The exchange started with interviews between functional units responsible for the collaboration area and coordinating units and in total approximately 50 startups: "And with the [number pre-selected startups] we then go into interview calls. In most cases, the relevant units are also present so that they can really talk about the [collaboration project]" [SM]. The interviews aimed at confirming the startups' fit to the corporate's collaboration and using "[...] the last few minutes discussing in both directions whether it is possible to work together" [SM]. A pitch event marks the second touchpoint between corporate sponsors and applicant startups: "And after the interviews, we decide again in a meeting which ones we want to invite to a final pitch event or selection day. That's usually five–10 […]" [SM]. The pitch event is conducted to "pick up the management" and create a commitment to the collaboration project by giving them a final vote" [SM]. Additionally, the pitch event raised awareness of the opportunity to collaborate with startups in the broader organization or among other functional units. An MD described the PA's efforts to open the pitch events for the broader organization: "So at least internally, not only the decision-makers were there, but also ideally employees were allowed to participate in the pitch events. This promotes the topic of working together with startups a bit culturally and breaks down the barriers a bit" [MD 2].

In all settings, the PA moderated the interaction between corporate sponsors and applicant startups, hereby steering the information exchange in a manner it perceived as effective to overcome usual challenges in interaction. While the general scaffolding for the meetings was consistent across the corporate sponsors, the final configuration of the meetings was adjusted to meet the needs of specific corporate sponsors. The meetings were adjusted, for example, in terms of the degree of formalization, the number of involved units, or the openness for the broader organization. For example, while the one-on-one meetings with the startups had a

similar format across all corporate sponsors, the format of the pitch events differed in type (e.g., online meetings or live streams via Youtube), degree of formalization (e.g., informal meeting with loose agenda or choreographed and strictly moderated), or the openness for participation (e.g., only engaging previously involved coordinating units, functional units, and management or being open to the public).

Table 25: Corporate-startup Meeting Formats per Corporate Sponsor

Corporate Sponsors	One-on-one Meetings with Startups	Pitch Event with Startups	Other Meetings
Corporate 1	**Meeting formats:** ~30min virtual meetings including a startup pitch and open discussion afterward **Involved units:** representative coordinating unit, representative functional unit responsible for collaboration project	**Meeting formats:** ~2h live streamed event via YouTube with ~15 minutes per startup (including pitch and open discussion afterward); formal introduction by corporate managers and moderation by PA **Involved units:** management representatives, coordinating unit, functional unit, open to further employees and the public (live stream open for the public)	None
Corporate 2	**Meeting formats:** ~20min virtual meetings including a startup pitch and open discussion afterward **Involved units:** representative coordinating unit, representative functional unit responsible for collaboration project	No event, startup selection based on previous meetings	None
Corporate 3	**Meeting formats:** ~25min virtual meetings including a startup pitch and open discussion afterward **Involved units:** representative coordinating unit, representative functional unit responsible for collaboration project	**Meeting formats:** ~1.5h live streamed event via YouTube with ~10 minutes per startup (including pitch and open discussion afterward); formal introduction by corporate coordinating unit and moderation by PA **Involved units:** management of innovation units, representative coordinating unit, representative functional unit, further employees (live stream open for entire organization)	Additional one-on-one meetings with startups to discuss technological product specifics without PA attendance
Corporate 4	**Meeting formats:** ~20min virtual meetings including a	**Meeting formats:** ~2h meeting with ~25 minutes per startup (including pitch	None

startup pitch and open discussion afterward	and open discussion afterward)
Involved units: representative coordinating unit, representative functional unit responsible for collaboration project	**Involved units:** management of CVC unit, representative coordinating unit, representative functional unit

Towards the applicant startups, the PA aimed "just to be a good, neutral platform that on the one hand really has the well-being of the startups in mind" [HEC 1]. To ensure the startups experience a transparent process, the PA "took over a lot of the communication with the startups" [SA 2], onboarding at first approximately 50 startups to the matchmaking process and continuously answering their questions. Moreover, the PA ensured that relevant information about the startups was available in the corporate decision-making process by channeling questions and answers between the participant organizations.

Summary. In summary, the PA used a structured process scaffolding with dedicated communication structures and tools to match corporates with startups, spanning internal (i.e., between corporate units) and external (i.e., between corporates and startups) organizational boundaries. Throughout the matchmaking process, the PA uncovered new collaboration opportunities, pre-evaluated the applicant startups, and facilitated structured meetings supporting the participant organizations in evaluating the match. The scaffolding was adapted to reflect the corporate sponsors' needs and conditions of the specific cohort. The evidence is summarized in Table 26.

Table 26: Evidence for "Structuring Matching"

Aggregate Dimension: **STRUCTURING MATCHING**	
Second-Order Codes	**Selected Evidence on First-Order Codes**
Uncovering (additional) collaboration project opportunities	*Mobilizing corporate functional units* "There is interest from the specialist unit, there are potential resources for a project with this specialist unit. We have a personal contact person from this unit who would look at them [the startups] and then also do a project." [SM, Interview 2] "We do that every six months, encouraging them to think about the [collaboration

areas]: Where does it make sense to involve other departments? Do we want to do a workshop with the [human resource] department? See if they are interested in startup topics and process-related topics. We actually do this every six months to encourage them." [MD 2, Interview 1]

Transforming collaboration areas with corporates
"First step, we agree on the [collaboration areas], you can also call it focus fields, I call it [collaboration areas], that's what we call it internally with the corporate sponsors. [...] And a [collaboration area] is more or less a PowerPoint template that we fill out together, for example, we want to automate our customer service. [...] Then we have tech, application fields, goals, and important keywords that you tell us that we should consider in this area. And then we put that on your PowerPoint page and that is then our alignment on what we are looking for." [SM, Interview 1]
"Of course, we have the startup view of the whole thing.[...] We contribute our expertise with the startup perspective, but the direction of thrust comes from them [the corporates]." [SM, Interview 1]

Translating collaboration areas to startups
"For [cohort] #[number] [name Corporate 1] is looking for startups in the following fields: sustainable packaging: innovative solutions, materials and design; sustainable food and non-food products: reusable, recyclable, ecological, plastic-free products; foodtech […]." [OD, PA website]

Scouting promising startups
"First of all, we have internal databases, we use a central database called [name]. [...] Beyond that, for example, look around in the entrepreneurship center. Maybe [VC firm name] has already created lists. We also search through the VCs to which we have contacts. [...] And look for startups out there or also simply engage in desktop research, simply browsing the internet." [SA, Interview 1]
"Outreach to up to 800 startups in [collaboration area], then comes the application of 130/140 startups […]." [MD 1, OD public talk via YouTube]

Attracting startups to asymmetry bridging opportunity
"What are the advantages of taking part in our next [cohort]? With [name PA] startups have access to: fast-track to a [collaboration project] with one of our leading industry sponsors, in your case [name corporate]." [ID, mailing to attract applicant startups]
"In case you still have more questions, we will be happy to help you during our online questions and answers session every Thursday from three–four. Just jump in here: [link] (no registration or requested access needed)." [ID, mailing to attract applicant startups]

Pre-selecting applicant startups	*Attributing applicant startups to collaboration areas* "So when the application phase is over, we start with the matching process […] And we already sort out the poor-quality stuff, because we really don't want to pass it on to our corporates." [SM, Interview 1] *Pre-evaluating startups based on criteria* "And we do a first preliminary rating. That means we write a first short comment and we have a simple star system 1–5 stars and a comment based on that rating, which is five to six lines long." [SM, Interview 1] "Maybe you are still interested in what exactly is looked at: so the elements. On the one hand, that would be the pitch deck, of course, which the startups provide us with. Then they write proposals for your [collaboration project] with the corporate partners. And, uh, in addition to that: 'Okay, just describe yourself in two to three sentences, what is your [unique selling point], what problem do you solve, describe

	your team, do you already have funding. For example, we wouldn't take a startup with 10 million in funding because it is already out of scope. There we have all the criteria, they all play together." [SA, Interview 1]
	Pre-evaluating startups based on match to collaboration area "[…] and what's actually still almost the most relevant for me is the [collaboration project] proposal, what they write here. Um. I hope you can see all that. Exactly, so that's the most important thing for me because I can also assess how they assess themselves and their technology and how they see the fit to the company." [SA, Interview 1]
Structuring corporate-startup interactions	*Organizing alignment across corporate units* "Startup call with shortlisted startup, 30 minutes between startup, corporate, and [name PA]." [OM, calls between corporate sponsor and startup] "Pitch event with selected startups based on ~30 mins startup calls plus ~1 h of technical calls with promising ventures, three startups selected for pitch event in close alignment with business units, less than usual startups in a pitch event, but with promising setup for [collaboration projects] due to business unit alignment, ~2 h pitch event with 25 mins per startup and ~20 mins debrief with participants." [OM, pitch event corporate 4] "Exactly and as soon as we have the matching and the pre-assessment, the sponsors get access to our [startup evaluation tool], which I have also unlocked for you, but they can only see their relevant applicants." [SM, Interview 1] *Acting as interface to promising startups* "That is, those that were on the shortlist and those that we invited to the pitch event. I informed them about the next steps. Answered their questions, etc. And I organized all the calls." [SA 2, Interview 1] "So we asked them how they would distinguish themselves from another startup [we looked at in the previous cohort]. What their [product] can be used for in concrete terms and also how recycling works. They gave us very concrete and good answers. And I have forwarded this to [name Corporate 1] again […]. And that's why they were invited again. Exactly, and they even made it to the pitch event." [SA 2, Interview 1] *Moderating interaction between corporates and startups* "[name sourcing manager] takes a moderating role, as usual calmly including an introduction and a summary, in which the next steps are explained to the startup, [name sourcing manager] asks own questions, regarding the aspects that were relevant for [name Corporate 1] from their experience in previous [cohorts]." [OM, corporate-startup meeting Corporate 1]

4.5. Matchmaking Process: Fostering Realization

Throughout the specific matching process, and increasingly towards the final stages (i.e., four to five months after the start of matchmaking), the PA engaged in activities to *foster the realization* of identified matches, which included *spontaneous interventions (i.e., nudging and navigating around hurdles) to influence the behaviors and decisions of the asymmetric participant organizations*. Hereby, the PA adapted the frequency and intensity of the

spontaneous interventions (especially nudging). First, if the PA trusted the corporate sponsor's startup selection and interaction competencies it did not intervene frequently. Alternatively, if it did not trust the corporate's competencies, the frequency and strength of the intervention increased. Second, in the later matchmaking process stages, the interventions increased if the PA perceived the risk of falling short of the desired number of collaboration projects per corporate sponsor and cohort (see Section 3.3 on optimal number of startups per cohort). While the realization of matches in collaboration projects was the main goal of all participant organizations, it was particularly crucial for the PA as a boundary organization with matchmaking as a core service. Realized matches were the key performance measure determining the continuation of corporate sponsorships as well as startup sourcing success in future cohorts.

Nudging corporates and startups towards collaboration projects. In parallel to structuring the matching process, the PA nudged the participant organizations in each process step towards the realization of paired matches in collaboration projects. The sourcing manager stated:

> Because I know what they perceive as interesting and where it is less likely to result in the [collaboration project]. I always have this perspective as a [PA name] that we need to accommodate [collaboration projects]. [SM]

For nudging, I refer to changes in "any aspects of the choice architecture that alters people's behavior in a predictable way without forbidding any options or significantly changing their economic incentives" (Thaler & Sunstein, 2009, p. 6). Throughout the evaluation process with the corporate sponsors, I observed the PA trying to alter the corporate evaluations to ensure sufficient startups are selected for the next process stage. By nudging, the PA tried, first, to create awareness for startups it perceived as relevant for a collaboration project and direct the corporates' attention. Second, it tried to overcome the corporates' doubts regarding the stability of the product and/or cooperation process arising, for instance, because of the startups' lack of reputation and track record or the partially young, inexperienced founding team (see Table 27).

For example, the PA proactively shared its opinion about single startups in the alignment meetings with the corporate units. It based its recommendations partially on objective criteria such as team or startup potential (e.g., "There is one startup left that we can highly recommend from a team perspective, […]" [MD 1]) but mainly raising positive personal impressions from previous interactions with certain applicant startups (e.g., "It's different when I know them personally. That's a point we also pass on to the corporate sponsors. […] We knew that they were a perfect fit for [name PA]" [SM]). For example, one startup was neglected by a corporate partner (rated moderately in the evaluation tool), because no corporate unit able to conduct the collaboration project was involved in the matchmaking process and could access the actual fit. By indicating the startup's potential in the evaluation meetings with the corporate sponsor and reinforcing its position, the PA triggered the involvement of a suitable functional unit. The startup advanced and conducted a collaboration project. In startup evaluation meetings, the PA also invested efforts to persuade the units out of a hasty rejection of startups to allow the startups to convince the corporate in personal interactions: "in case of doubt, it is better to make a call and not think much about whether it is really worth it now because you have the chance to get to know a startup personally, to ask questions" [MD 1].

Another example observed in the case of a comparably inexperienced corporate sponsor was a tactical adjustment of the written startup evaluations. The PA adapted its startup ratings and "set [our] 'Yes,' 'No,' and 'Maybes' a bit strategically" [SM] based on previously known corporate ratings to bring certain applicant startups into the next matchmaking round. Strategically rated startups progressed to the final pitch event. While we observed that interventions remained minimal for corporate sponsors experienced in startup collaboration, less experienced corporate sponsors were nudged more actively.

In interactions between corporate sponsors and applicant startups, the PA also steered the discussions by asking targeted questions. On the one hand, the PA tried to ensure that all

"typically" relevant aspects for the corporate sponsors' decision are answered (e.g., "Question from my side if you would work with [name Corporate 1] on a [collaboration project], what would a 20-week setup look like? How would you structure the project to ensure we have results at the end of the 20-week phase?" [MD 2]). On the other hand, the PA tried to give the startups opportunities to emphasize their strengths (e.g., "Quick question from my side: How did you come up with the idea?" [MD 2 knowing that the background story on the idea was interesting]).

Finally, the PA enabled the applicant startups to better cope with asymmetric corporate expectations within the pitch event by using a "formal communication style, determining the appropriate presentation length and contextual focus, and structuring question and answer sessions" [field notes startup calls and pitch events]. The PA proactively voiced the corporate's expectations towards the startups and coached them to fulfill general corporate expectations towards professionality or the presentation format before the pitch events. A sourcing analyst stated: "I have informed the startups. They are briefed by us. I have told some of them, as I said, which things they should focus on, that [corporate name] is interested in this" [SA 2]. Based on the PA's coaching the startups adjusted their pitch presentations to reflect the corporate's preferred focus areas/design for a collaboration project or adjusted the presentations to the expected length or design.

Table 27: PA's Nudging of Corporates and Startups Towards Collaboration Projects

Situation/Context	Nudging by PA	Implications of Nudging
Startup evaluation meetings with corporate sponsors	*Referrals for startups: PA compares its startup evaluations with corporate evaluations (accelerator—high, corporate—low) and discusses "missed out" startups*	
	Example 1—intervention, no effect: "Found them exciting because they were looking for cheap alternatives or further [technology] and they are in the flexible low-cost area. We thought they could be very exciting. [Name innovation manager] gave 4 stars, were there other people interested in a [collaboration project], or did [Name innovation manager] just like the application?" [SM]	**Situation:** initially mixed evaluations on corporate side **Immediate implication of PA's nudging:** no effect (e.g., "Technology itself very interesting, but don't know any possible application. Do not know anyone with whom you could set up a [collaboration project], so do not pursue further.")

Example 2—strong intervention, impacting startup progress to next process step: "I personally find this application very exciting because I have been following the startup for a while. [...] I can certainly imagine that it has relevance for [Corporate 4]. I would suggest that you look at it again from that point of view. [...] You are connected with [large corporation] and it has invested [in the startup]. Possibly it's an exciting solution." [MD 1]	**Situation:** initially low evaluation by corporate **Immediate implication of PA's nudging:** corporate discusses startup with business unit **Impact:** startup is invited to interview call, but does not participate in pitch event
Example 3—intervention, impacting startup selection for collaboration project: "The next startup is [name startup] for disinfection with ultraviolet light. I thought the solution is smart and the products looked also quite valuable. But I can also imagine it [the use case] is more relevant in public institutions." [SM]	**Situation:** initially moderate evaluation by corporate **Immediate implication of PA's nudging:** corporate reflects on collaboration project opportunities and discusses startup with new business unit; (e.g., corporate reflecting on potential unit to work with startup: "Aimed specifically at [corporate unit], more in the 'professionals area,' but also relevant in the [name collaboration area] concerning the topic of hygiene. But it is rather unclear how UV has been classified to date, possibly also in the robotics/air cleaning area.") **Impact:** startup is selected for a collaboration project, with strong business unit support
Persuading out of hasty decisions: PA convinces corporates to get to know or gather more information about startups before making a decision	
Example 1—priming corporates towards openness: "Calls do not have a length of 1 h, but 15–20 min, so in case of doubt it is better to make a call and not think long about whether it is really worth it because you have the chance to get to know a startup personally, to ask questions. In the past, it was often the case that teams that were only rated average could convince very well and the other way around, teams that looked good on paper but rather disappointed." [MD 1]	**Situation:** introduction in evaluation meeting with corporate **Immediate implication of PA's nudging:** not observable
Example 2—convincing to pursue exchange with startups in case of doubt: "Again, do not aim too high. The phone call is an opportunity, also [to get to know the startup] through us [PA program]. It does not even mean that [Corporate 4] expresses an official interest or plans a [collaboration project]. This is simply an informal get-to-know-you call as part of an application to [PA program]. 20 minutes and totally without obligation." [MD 1]	**Situation:** discussion on invitation of startup to interview call **Immediate implication of PA's nudging:** startup invited to interview call

Interactions between corporate and startup (including interviews and pitch events)	*Steering exchange: PA directs exchange between corporates and startups by providing a structure and asking targeted questions throughout the interaction*	
	Example 1—ensuring all relevant information for selection are available to corporate by asking: "Question from my side, if you would work with [Corporate 1] on a [collaboration project], what would a 20-week setup look like? How would you structure the project to ensure we have results at the end of the 20-week phase." [MD 2] "Could you describe the stage of your company as well as goals and challenges? In terms of team size, commercial-stage, and how can a project like this help you as a company." [SM] "Could you give some numbers on how customers are engaging [with your product] and how your experiences with retailers are? […] You are talking about online shopping. Do you have experience with offline, it's probably of bigger interest for [Corporate 1] due to the broad branch system." [SM]	**Situation:** questions in startup interviews or pitch events to point out information to corporates (information usually available to PA in application documents) **Immediate implication of PA's nudging:** not observable
	Example 2—praising startups or allowing them to show strengths: "Amazing product, very admirable what you are doing. Just imagine if all products in supermarkets were packed with your material." [MD 2] "Quick question from my side: How did you come up with the idea?" [MD 2 knowing the story is interesting]	**Situation:** remarks/questions in startup interviews or pitch events by PA (information usually available to PA from previous interaction) **Immediate implication of PA's nudging:** not observable
Startup evaluation software tools	**Example:** manipulation of own rating in startup evaluation tools to ensure startups progress to next process stage: "set [our] 'Yes,' 'No,' and 'Maybes' a bit strategically" [SM]	**Situation:** diverging startup evaluations between corporate units **Immediate implication of PA's nudging:** startup progresses to pitch event
Startup interaction (including mails and calls)	*Coaching startups to cope with asymmetry: PA informs startups about the requests and preferences of the corporate sponsor and also gives startup feedback on general expectations of corporates as different organizational type*	
	Example 1—informing startups about process structure and general corporate expectations: "I raise the awareness again about which people are in there [the meeting]—so the management of the venture capital arm. To ensure they see the seriousness. Because now they are a bit more relaxed, they know the people [corporate functional units] from the calls. And then they have to realize again that it is a bit more formal." [SA 2]	**Situation:** final startup briefing before pitch event by PA **Immediate implication of PA's nudging:** not observable
	Example 2—generally coaching startups to improve presentation quality: "We have decided to have all decks sent to us before the	**Situation:** final startup briefing before pitch event by PA

pitch event. And we will go through them and give feedback if necessary." [SA 2]	**Immediate effect of PA's nudging:** adaptation of presentations for pitch event
Example 3—informing startups on corporate interest regarding collaboration project focus: "They [Corporate 1] are now mainly interested in the [startup product line 1], or they would also have a [startup product line 2], which they do not sell at the moment but would like to sell again. These are the two focal points that we have set for the pitch event." [SA 2]	**Situation:** final startup briefing before pitch event by PA **Immediate effect of PA's nudging:** adaptation of presentations and collaboration project suggestions for pitch event

Navigating (potential) project realization hurdles. The PA invested a considerable amount of time in situational interventions to avoid the distortion of potential partnerships in the final process stages, navigating around arising collaboration hurdles. While *navigating hurdles* resembles in some aspects Colman and Rouzies (2019) "mitigating" concept, which refers to the calming of stakeholders to prevent disruptions and conflict mitigation, the observed intervention was more subtle, building on professional trust and relationships between the PA and corporate or startup.

For example, when a corporate doubted a startup's capabilities to conduct a collaboration project, the PA advocated for the startup. It fostered the corporates' trust in its professional opinion as well as the personal relationship between an MD and the corporate coordinating unit:

> I think that they trust [name MD 2] very much. When [name MD 2] says she has a good feeling that it fits and will be something [a successful collaboration], that triggered the corporate decision and they said we'll take it [the startup]. I'm pretty sure of that. Before [name MD 2] and I talked to them [the startup], or mainly [name MD 2], it was 'Cool product, but the founding team is not such a good fit.' But I think [name MD 2] did a pretty good job of mediating between the two sides. [SM]

During discussions with the startup, the MD of the PA expressed the corporate's concerns and provided coaching to help the startup meet expectations in future interactions. In turn, the MD expressed optimism about the startup's potential to learn and professionalize. As a result of the accelerator's mitigation efforts, the startup was admitted to the cohort. Moreover, the

accelerator attempted to encourage applicant startups to commit to identified matches and collaboration projects. An MD described additional facilitated conversations between an applicant startup and a corporate sponsor:

> So they want to with [name startup]. So I would, so it's not final yet. Because the startup also says they need to better understand which [collaboration project] [name Corporate 2] wants to work on exactly. So there are still talks going on [between PA and startup], but I would just assume that they will be admitted [to the PA]. But it's a bit of a special case because they are based in New York and probably wouldn't participate fully in the program from a resource perspective—due to scarce resources. [MD 1]

To facilitate the realization of collaboration projects, the accelerator even adjusted the terms of participation in the acceleration program to increase the appeal and lower the barriers to entry for applicant startups that were deemed attractive by corporate sponsors. For example, the accelerator would consider reducing the program time or expectation to physically attend the program for such startups (see Section 4.6 *Scaffolding: Formalizing the collaboration project*).

Summary. In summary, the PA engaged in activities to ensure identified matches were realized increasingly during the final stages of the matching process. This effort included nudging and navigating around arising hurdles to influence participant organizations' decisions and behaviors. The frequency and intensity of interventions depended on the PA's trust in corporate sponsors' startup-selection competencies and the risk of falling short of desired collaboration projects. Realized matches were crucial for the PA as a boundary organization and determined the continuation of corporate sponsorships and future startup sourcing success. Table 28 summarizes the evidence.

Table 28: Evidence for "Fostering Realization"

Aggregate Dimension: **FOSTERING REALIZATION OF IDENTIFIED MATCHES**	
Second-Order Codes	**Selected Evidence on First-Order Codes**
Nudging towards collaboration projects	*Providing referrals for selected startups* "We would highly recommend it [the startup], we know the team quite well. They were also in the incubator program and have developed well. Also working with [name previous corporate partner] very successfully in remote service. An interview

would be very exciting." [OM, MD 1 in meeting for startup assessment]

"Of course, we can present the teams that we know ourselves a bit better than others that we don't know yet. […] Then it's easier for us to highlight from our side that we really are a great team." [SM, Interview 1]

"We had a quick look at it before. Then [name PA manager] and I said, ok we're running short here and there. We still have to argue for one–two [startups]. [...] We had in advance the ratings from [name Corporate 1], [they filled out] well-behaved our template and everything." [SM, Interview 5]

Persuading corporates out of hasty decisions
"Calls do not have a scope of 1h, but only 15–20 minutes. […] In the past, it was often the case that teams only rated average could convince the corporate in the calls and the other way around, teams that looked good on paper rather disappointed [in the personal interaction]." [OM, MD 1 in meeting for startup assessment]

"It's no preliminary decision, it's only the opportunity to organize a personal meeting based on written documents including technical questions and getting to know the team. Even the last stage, the pitch event is not a preliminary decision that we do a [collaboration project]. I would even want to encourage you to meet a startup where you say a [collaboration project] is out of the question but maybe an exchange is not uninteresting—that it is totally legitimate: What kind of topics are they working on?" [OM, MD 1 in meeting for startup assessment]

Steering exchange between corporates and startups
"Thank you, very interesting. How do you imagine the [collaboration project] with [Corporate 1]? We have five months. [startup answering] What is your shortage, getting the [resources to be recycled]? [startup answering] For [Corporate 1] they would have to provide you with the [resources to be recycled] and then receive the [end product]? What is the model?" [OM, MD in call with startup starting the question and answer section for corporate sponsor]

"With [name Corporate 1], you can take over a bit more of it [the conversation], moderate more between the two." [SM, Interview 3]

Coaching startups to cope with asymmetry
"We decided to have all the decks sent to us before the pitch event. And we will go through them and give feedback if necessary. And tell them what they should maybe work out in more detail." [SA 2, Interview 1]

Navigating (potential) project realization hurdles	*Advocating startups towards corporates* "So the pitch was so bad and I think that was also a concern on the [name Corporate 1] side, whether they were professional enough. Especially also in terms of working together on a [collaboration project]. That was really one of the things they doubted. [name MD 2] and I scheduled another call with [name founder] after that. [Name MD 2] was relatively honest with him about what the concerns were, just in terms of professionalism. [...]." [SM, Interview 8] *Convincing startups to commit to collaboration projects* "Please let us know as soon as possible if you accept the offer for our program. After receiving your confirmation, we will introduce you to [name Corporate Partner] department responsible for your [collaboration project]. If you have any questions, please don't hesitate to contact me. Thanks a lot and kind regards, and congrats again! We are looking forward to having you in the [cohort]!" [ID, acceptance mail to startups]

4.6. Scaffolding: Formalizing the Collaboration Project

For the 10 identified matches the PA *formalized the collaboration projects by specifying an operating scaffolding* (i.e., temporal and financial conditions, contracting, and parallel participation in the PA cohort). The scaffolding *helped the prospective partners to pre-empt challenges* usually arising when directly coordinating negotiations or contracting. While the scaffolding reflected the PA's experience with typical preferences of and pitfalls between the asymmetric organization, selective adjustments of the scaffolding to the individual cohort or partner organizations' conditions were made to ensure that all identified matches are realized. The provision of operating scaffoldings or boundary organizational practices integrating divergent interests and serving as working rules to sustain established relationships was discussed in boundary spanning literature (Yeow et al., 2018). The PA's handover of its formal coordination responsibility to the new partners after implementing the scaffolding is a newly observed phenomenon in boundary organization literature. This phenomenon introduces the idea of conscious temporality of the organization's support model (O'Mahony & Bechky, 2008b; Perkmann & Schildt, 2015).

Providing an operating scaffolding for a collaboration project. Having completed the matchmaking process with 10 corporate-startup matches, the PA formally remained in its role as boundary organization. However, instead of actively steering the collaboration projects, as it did for the matchmaking process, it solely provided an operating scaffolding for the collaboration project. This action prevented a delay or even failure of the collaboration projects due to lengthy negotiations between the asymmetric participant organizations—a typical pitfall in the initiation of corporate-startup collaborations. From the PA's perspective, the delay or failure of negotiations was driven by the corporates' lack of experience in working with startups. The limited experience resulted in an inability to manage the risk of the startups' unproven technology or product as well as unstable routines, operational capabilities, and

financial resources (e.g., Kurpjuweit & Wagner, 2020). A head of the entrepreneurship center explained typical challenges in the final contracting phase: "And the expectation horizon is very different. So there really is a problem of understanding. And then, when it becomes more concrete, in other words, when agreements or contracts are made when deliveries have to be made—it's just all connected with a lot of effort" [HEC 1].

The operating scaffolding defined the temporal and financial scope of the collaboration project, whereby a grant to cover the project expenses is covered by the corporate sponsor but paid out to the startup directly by the PA. Additionally, the PA acted as the startups' contracting party and conducted the contract negotiations for the acceleration program as well as the collaboration project. While generally enforcing the described scaffolding, the PA modified selected elements to enable collaboration projects or support startups without corporate matches in the context of the acceleration program. One example is the PA using existing scaffolding, including dedicated governance structures established with the corporate sponsors, to contract startups under program terms that conduct a collaboration project only with a corporate sponsor (e.g., "[name startup] run a little bit beside the program, they do the [collaboration project] and which is also billed over [PA name]. But they are now no longer a program participant in the sense" [SM]). Another example is the individualization of participation terms for the acceleration program as the PA MD described:

> [name startup] is not a classic case, we know that they are only marginally involved in the program, but it is still a fit for [name Corporate 2]. We are not a program where the goal is to have the best statistics at the end, but at the end, we have to make our corporates happy." [MD 1]

PA's handing over of steering responsibilities for collaboration projects. After the contracting was completed, the PA handed over its steering responsibility. It stopped engaging in structured boundary spanning activities within its role as boundary organization as opposed to the permanent engagement of boundary organizations described in the literature (O'Mahony

& Bechky, 2008b; Perkmann & Schildt, 2015). Instead, the PA triggered direct coordination of

the collaboration project by the corporate sponsor and startup as new collaboration partners:

> And then they distribute it internally, I mean the corporate sponsor to the department, and they deal with it, do kick-off events. They also make agreements regarding the [collaboration project]. And things like that, exactly. From then on, as far as the [collaboration project] is concerned, on the corporate sponsor side, we are a bit more out of the game. [SM]

Supporting the actual collaboration project on a process or technical level was outside the PA's

competencies and also surpassed its personnel resources. Additionally, the PA could exit the

active boundary spanning responsibility, because it initially matched the functional unit and

startup, surpassing common hurdles (see Table 20) and also provided the collaboration

scaffolding that corporates and startups could operate in. While formally handing over the

responsibility to run the project, the PA still situationally intervened in case of

misunderstanding or conflict, as the sourcing manager described:

> I think there's a bit of a crisis with [name Corporate 1] and [name startup]. Because I think it's really difficult in the information technology department to find someone who feels responsible for the project. […] I think that was a topic that [name MD 2] once discussed with [name innovation manager] from [name Corporate 1]. [SM]

Summary. In summary, the PA formalized collaboration projects for identified matches by

specifying an operating scaffolding that included temporal and financial conditions for the

collaboration projects, parallel participation in the PA cohort, and contracting. The scaffolding

helped the new partners to preempt typical negotiation and contracting hurdles. The PA handed

over the formal coordination responsibility for the collaboration projects to the new partners

after implementing the scaffolding. Table 29 summarizes the evidence.

Table 29: Evidence for "Formalizing Collaboration Project"

Aggregate Dimension: ***FORMALIZING COLLABORATION PROJECT***	
Second-Order Codes	**Selected Evidence on First-Order Codes**
Providing operating scaffolding for collaboration project	*Defining temporal and financial scope* "We offer a unique program to our startups—during the [duration] program, you will get intensive training and coaching on all kinds of business topics. You will collaborate with one of our leading corporate partners to further develop your product or service, with a € [amount] project budget." [OD, website] "Potentially two weeks after the program start. The main focus now is really that a [collaboration project] is carried out with [name Corporate 2]. If they come in two weeks after the start of the program it is not a big problem." [SM, Interview 9] "We would sponsor it [the startup] via the [collaboration project], via [name PA], or [name Corporate 3] would sponsor it via the [name PA] budget. But we wouldn't include them in the coaching and mentoring again." [SM, Interview 6] *Managing financial transactions* "You [startup] will receive €[amount] in tranches. To receive it, please send two invoices with the amounts below to [e-mail]." [ID, e-mail to startup] *Acting as contracting partner* "We sent the contract out the same day. The next morning it was signed, exactly, and then it actually went straight into the [cohort] the day after." [SM, Interview 9] "That was a bit more difficult because they were a bit more precise with the contract. [...] I had a call with [name MD 2] and [name startup founder], and [name MD 2] explained everything, and in the end, everything was good. They took it as it was." [SM, Interview 8] *Triggering project planning* "Congratulations, we are happy to announce that [Corporate Sponsor] and the [name PA] team would love to have you in the upcoming [name PA] [cohort]! To get you onboard, we kindly ask you to complete the following steps: 1. Please confirm your postal address so we can send you the contract. 2. Please also already read through the contract which is attached as PDF. Please insert your bank details, countersign it, and send it back to us via email. 3. Furthermore, please fill in the onboarding questionnaire as soon as possible: [link]. 5. Please fill in the missing information about your startup in the attached one-pager." [ID, e-mail to startup] "Distribute one-pagers to describe project objectives, timeline and milestones, success criteria, working mode, and contact person." [SM, Interview 7]
Handing-over active boundary spanning responsibilities	*Kicking-off collaboration* "I believe that this kick-off is what we need to initiate. So the kick-off for this [collaboration projects], where they really sit down together for a few hours and discuss the respective topics, what they want to tackle, what the goal of the project is, and so on." [PM, Interview 1] *Intervening through needs-based mitigation* "Exactly, projects are running. I think with [name startup] it's a bit shaky on the startup side. With [name startup], perhaps a bit shaky from the [name Corporate 1] side. That was a bit of a difficulty. But it's still running. So it's not that the collaboration project was canceled or was on the verge of being canceled. But simply that [name MD 2] had to moderate a bit between both sides." [SM, Interview 10] "But we actually also advocated for it to continue. And we checked with them: Is it

really an unsolvable problem? Can we somehow, solve the problem? Or improve it somehow? Or come to a compromise? So there's also the commitment when things aren't going so well." [SM, Interview 8]

4.7. Boundary Organization: PA's Repositioning for the Next Matchmaking Process

The *relationships established throughout and sustained after the matchmaking process impacted the PA's positioning as a boundary organization for the upcoming cohorts*. The improved relationships led to an improved network structure as an enabler for boundary spanning. For the corporate sponsors, the matchmaking processes impacted the negotiation basis for periodically (i.e., typically every two years) re-selling the PA's services as well as the opportunity to re-engage participating and engage new units in the upcoming cohorts. While the PA did not need to negotiate and re-sell its services to the corporate sponsors for each cohort, contracts typically lasted for two years or in some cases less. The need to (re)-sell its services to corporate sponsors is unique to the external, independent PA as compared to corporate internal or boundary spanning organizations affiliated with one of the participating entities (e.g., Monteiro & Birkinshaw, 2017; O'Mahony & Bechky, 2008; Shankar & Shepherd, 2019). On the startup side, the PA enlarged its startup pool for the following matchmaking rounds. Additionally, through process repetition, the PA improved its positioning as a boundary organization by obtaining general knowledge (e.g., asymmetries between corporates and startups, the ability to translate and transform in new domains) and knowledge on the participant organizations (e.g., corporate organizational dynamics, startup technology areas).

(Re)-selling corporate sponsorship for future cohorts. The PA's positioning with the corporate sponsors for upcoming matchmaking rounds improved likely helping the boundary organization in re-selling its matchmaking services. The positioning was impacted by two mechanisms: more and/or stronger relationships with functional units and a perceived increase in trust in the PA.

First, throughout the matchmaking process, the PA expanded its relationships within the corporate organization by interacting with several functional units. The sourcing manager described the corporates' feedback after the final pitch event: "[…] they felt well taken care of and saw results, I think. So generally with all the corporate sponsors, it's always the case. And more and more people were continuously involved in the processes—that helps" [SM]. In addition to directly involved functional units, new units were selectively approached to evaluate startups applying outside the collaboration areas in this cohort. For example, the coordinating unit of Corporate 2 forwarded a startup application outside the collaboration areas to a new functional unit. An MD described:

> "[name startup], there I rather braked a bit because I said it would be quite a fluke if it fit. I then also spoke to the person in charge from the department [functional unit] to whom the job was assigned. […] But she was also optimistic, probably we will include this as a single [collaboration area] in the next [cohort] or the next search." [MD 1]

In the next cohort, the collaboration area was included in the matchmaking process and the initial applicant startup was selected to conduct a collaboration project.

Second, repeated collaboration and successful matches increased the corporate sponsors' perceived trust in the PA. From the PA's perspective, this outcome fueled the longevity of relationships and therefore corporate sponsorships: "I would say significantly better, more appropriate results. [...] Let's say that with this approach we have managed to extend the majority of our sponsorships" [MD 1]. In the three subsequent cohorts, only one of the four corporate sponsors permanently terminated the sponsorship agreement with the PA (e.g., sponsorship continuation: cohort n+1 sponsored by Corporate 1, 2, 3, 4; cohort n+2 sponsored by Corporate 2, 3; cohort n+3 sponsored by Corporate 2, 3, 4).

Bridging failed matches into future cohorts. Applicant startups without a fit to the available collaboration opportunities were rejected in a way that sustained the relationship between the startup and the PA. This context ensured that the approximately 400 applicant startups rejected

for this cohort remained approachable for upcoming cohorts with the same or changing corporate sponsors, continuously improving the PA's positioning as a boundary organization in the ecosystem. A feedback e-mail to a startup emphasized:

> Unfortunately, we have to inform you that your company has not been selected to take part in the upcoming [cohort]. Please keep in mind that this decision is not related to the overall quality of your application and the interview/pitch, but rather to the timing of it. […] Sometimes your technology comes just a little bit too early for them [corporate partner]. This having been said, the timing could be right for our next [cohort]! [OD]

For example, rejected startups were promptly informed after each stage gate about the decision and in startup-friendly language (i.e., clear, friendly). The argumentation line in the rejection e-mail consciously justified the decision linked to corporate needs or the lack of capacity for a project without voicing critique or actual feedback regarding the startup's solution. The PA followed the same approach if startups asked occasionally for more extensive feedback over the phone. Furthermore, the PA voiced open-door rejections by concluding the rejection mail with an invitation to re-apply for the upcoming cohorts: "Hence, please do consider applying to [the PA] in the future again, if it is still relevant to you. We regularly accept startups to our program that have applied multiple times before. We are looking forward to receiving your application in the future!" [OD]. For example, the PA's efforts led to the admission of two startups that applied for the cohort under investigation in the upcoming cohorts (cohort n+1 and cohort n+3).

PA's and corporates' learning from process repetition. At the time of data collection, the matchmaking process scaffolding was well-established in the PA organization as well as the corporate partner organizations as a manager of a coordinating unit described:

> The process has been very optimized this time, thanks to all who were involved in the pre-selection. We have done a lot right this time in the integration of the individual departments—in the sense of ownership. And in the selection and the search right in the beginning by [name PA]. […] We are happy when we have advocates from the departments. [Corporate 2, manager coordinating unit]

However, running the matchmaking process with corporate sponsors in partially novel collaboration areas and with a new pool of startups had learning effects for the PA. Additionally, corporates practiced the mobilization and involvement of functional units as project partners (i.e., engaged in experiential learning).

First, the PA reconfirmed and partially enhanced its general expertise about the different needs and potential asymmetries between corporates and startups. Particularly, new PA employees gathered expertise by managing arising challenges. The PA's interaction with different corporate units improved its ability to generally transform and translate startup knowledge to corporates and functional units in new domains. For example, the PA had to manage in-depth negotiations between corporate units and deep-tech startups in a corporate sponsor's core knowledge areas for the first time:

> I believe that this is now really already in the...perhaps even a step further [than others] because it is really about specifying the details beforehand...so with such a complex topic of [technology topic], where [Corporate 2] already does an insane amount and has competencies—they would already have to go into insane detail now. [SM]

In an informal exchange the sourcing manager explained, "The longer we work with corporates, the more complex the collaboration projects get. We are learning how to handle that" [SM, field note from conversation].

Second, working on new collaboration areas with different corporate units and startups enhanced the PA's understanding of the particular requirements and internal dynamics in the different corporate organizations. The PA learned about the engagement of involved functional units as well as the influence of the coordinating unit on other units in the respective organization and applied this knowledge to adjust the next matchmaking process accordingly. For example, the sourcing manager explained the internal dynamics within Corporate 1:

> […] in information technology [unit] the commitment to the project was basically not there. […] So then we considered whether the startups that we are now selecting for the

next cohort should really only be startups that are not related to information technology. […] No, we don't have any information technology startups. [SM]

On the startup side, the PA learned how to source in new collaboration or technology areas. Finally, the PA identified minor opportunities for improving the matchmaking process for the next cohort.

Summary. In summary, the relationships established and sustained during the matchmaking process improved the PA's network structure and positioning as a boundary organization for upcoming cohorts. The process impacted the negotiation basis for periodically reselling the PA's services to corporate sponsors and the opportunity to engage new units in upcoming cohorts. Through its feedback approach and open-door rejections, the PA enlarged its startup pool for future matchmaking rounds. Further, the PA obtained more general knowledge and knowledge on specific participant organizations. Table 30 summarizes the evidence.

Table 30: Evidence for "Repositioning for the Next Matchmaking Round"

Aggregate Dimension: **REPOSITIONING FOR THE NEXT MATCHMAKING ROUND**	
Second-Order Codes	**Selected Evidence on First-Order Codes**
Re-selling corporate sponsorship for future cohorts	*Expanding connections with corporate units* "Very noticeable that functional units became emotional and pitched together with the startups, even answering questions and providing arguments in favor of the startups. Mutual support of all [Corporate 4] functional units departments and startups (previous intensive exchange in several meetings noticeable)." [OM, notes on the relationship between corporate units and startups in pitch event] *Increasing corporate trust in service* "But I think the added value that we deliver in the end, we are better than other programs. Just with us, there are measurable simply, three, four, five [collaboration projects] per year, partnerships that we can show. Which are still working together now, for example [former participant startup] and [former corporate sponsor]; [former participant startup] and [former corporate sponsor]; [former participant startup] and [name Corporate 4], but really many more." [SM, Interview 2] "It was a perfect [matchmaking process] this time. Thank you!" [OM, Corporate 4 after pitch event]
Bridging failed matches into future cohorts	*Translating decision to startups* "Dear X, again, thank you very much for your application—we have good news for you! We and our sponsor X really liked your application, which is why we want to

invite you to a 25 min phone interview on (month, day) at (time am/pm; CET/CEST)." [ID, e-mail to startup]

Avoiding discouraging feedback to startups
"I was also asked for a bit of feedback. [...] Especially when people question their solution, that's always a bit stupid. Often it's not the solution itself. What we pass on when we don't get any feedback from the corporate sponsor is that it either doesn't fit in terms of time or capacity or that it doesn't really fit in with a certain previously conceived use case in the specialist unit." [SM, Interview 8]
"It's mostly our standard response: 'it was the [collaboration area],' but they always change it [the collaboration area] a little bit from [cohort] to [cohort] as well." [SM, Interview 8]

Voicing open-door rejections to startups
"We've actually always encouraged them to reapply." [SM, Interview 8]

Learning from process repetition	*Understanding general needs of and asymmetries between corporates and startups* "Apart from that, what I noticed that I would do next time, but that is probably less for the process, is to talk more about use cases than about [collaboration areas] of innovation, because I sometimes have the feeling that we write to a lot of startups and a lot of startups apply, but the use case is somehow different from the [collaboration areas] of innovation in which we are looking. And it always hurts me to reject so many startups when you've written to them. Exactly. So maybe discussing use cases with the corporates in more detail." [SM, Interview 10] *Deepening know-how about participant organizations* "I think they are basically very closed. And I think such topics, they address with us, or just with the [name MD 2], I think, somehow it's such a great proof of trust-, but no, exactly, it was somehow about the fact that with those in information technology —the commitment to the project was basically not there. Or no one felt really responsible for the project. And then it was kind of on the back burner. So then we briefly considered whether the startups that we select for the next cohort should really only be startups that have no information technology connection... So to that extent, it was already, that there were real difficulties accommodating startups there [in the information technology unit]. Exactly. And I-, that's what I meant with the corporate world and the startup world clash." [SM, Interview 10] *Educating corporates about startup collaboration* "Yes exactly, teaching character. How do I initiate such collaborations? That also has to do with the typical pitfalls of startup collaborations." [SM, Interview 1] "Over time, once you've been involved in this process, you're better able to put yourself in the shoes of the startups [...]. Then it just runs more seamlessly." [SM, Interview 1] "Because I think that corporates always react very inflexibly at first when they have a startup like this. I think that's also changing. Above all, in the meantime, the departments, especially [name Corporate 2] and [name Corporate 3], who have been working with us for years, know a bit about how things work. But I think it's precisely these fixed structures that you have to coordinate everything. Everything has to be very precise. You also have to check everything again with a lawyer or something like that, to make sure that everything is in order and things like that. So I think there are still differences. I think it's adapting because the corporates have also noticed that they need flexibility and that the startups also need it to make better progress. So I do believe that something is opening up." [SM, Interview 1]

4.8. An Emerging Model of the PA's Boundary Spanning

Based on the inductive analysis, a dynamic process model emerged (Figure 7). The model describes conceptually how the PA created the conditions for boundary spanning (*establishing and repositioning as boundary organization*) and the sequence of mechanisms (*anticipating, structuring, foresting, and formalizing*) for pre-cohort matchmaking to enable collaboration projects between corporate sponsors and applicant startups. Additionally, it introduces the types of boundaries as well as associated hurdles the PA spanned between asymmetric corporates and startups. The PA performed the matchmaking process strategically and proactively. Therefore the model contains (structurally) three different elements: (i) the PA built on its positioning as a boundary organization (organizational element), (ii) employed standardized process scaffoldings (process element), as common for boundary organizations (O'Mahony & Bechky, 2008; Perkmann & Schildt, 2015), and (iii) intervened with focused individual boundary spanning mechanisms (behavioral element).

Matchmaking was the PA's core service to multiple, regularly changing corporate sponsors. Therefore, the PA needed to support the corporates in managing multiple external organizational boundaries to hundreds of startups. Initially, the identification and attraction of startups in distant collaboration areas, characterized for example by technological boundaries or a deviation from common corporate search routines (e.g., lack of startup industry focus, lack of public record), required boundary spanning (Lopez-Vega et al., 2016). Boundaries in information exchange (i.e., semantic boundaries) and boundaries arising due to partially diverging interests (i.e., political boundaries) became particularly evident when corporates and startups started to interact personally (Carlile, 2004). While external organizational boundary spanning is complex in general (Bechky, 2003; Carlile, 2004; Lopez-Vega et al., 2016; O'Mahony & Bechky, 2008), the asymmetry between corporates and startups broadened the boundaries. The asymmetry entailed differences in needs and additional hurdles to be surpassed

in the initiation of collaborations. Additionally, organizational boundary management was complicated by multiple corporates and startups on both sides of the boundary with individual needs and hurdles as well as the changing corporate sponsors (1–3 changes per cohort), which altered external organizational boundaries.

The external organizational boundaries characterized by the asymmetry between corporates and startups opened up a need for the *establishment (and repositioning) of a stable boundary organization* managing the matchmaking process. I observed that to establish itself as a boundary organization between different worlds (O'Mahony & Bechky, 2008) the PA built knowledge about corporates and startups as abstract organizational types as well as know-how and relationships with specific participant organizations. This knowledge allowed the PA to anticipate differences in the operational practices and pitfalls in the direct interaction between corporates and startups as asymmetric organizations in general and the specific challenges of its current corporate sponsors with startups. Moreover, the subsequent boundary spanning mechanisms were conditional on the knowledge and relationships.

As the PA's business model focused on matchmaking between multiple, changing corporate sponsors with hundreds of potential startup partners, a standardized process scaffolding and a project scaffolding were required to be effective and to deliver consistent results across organizations and cohorts. The scaffoldings by design *anticipated* pitfalls arising in the direct interaction between corporates and startups as asymmetric organizational types in general. The matchmaking process scaffolding integrated different boundary spanning mechanisms (e.g., a *structuring* mechanism including *mobilizing*, *translating*, and *transforming* activities; Carlile, 2004; Colman & Rouzies, 2019; Monteiro & Birkinshaw, 2017). The mechanisms, on the one hand, enabled the PA to source startups in distant search spaces, and, on the other hand, enabled the participant organizations to meet potential partners and assess the match. At the end of the matchmaking process, an operating scaffolding enabling the formalization of the collaboration

projects preempted last-mile disruptions through conflicts commonly occurring between corporates and startups in the contracting phase. While the standardized scaffoldings were the basis for effective operations, individualizing process elements (e.g., startup evaluation tools, and meetings) was essential to service the specific needs and challenges of the paying corporates. Interestingly, I found that at the end of the process after contractually registering the matches the PA exited its mediating responsibility associated with its role as a boundary organization. It *handed over* the coordination of the collaboration projects to corporates and startups directly.

Focusing on the realization of identified matches, the PA engaged in individual, spontaneous interventions to steer the participant organizations' behavior in the desired direction (i.e., *fostering realization*). Throughout the entire matchmaking process, but particularly towards the final stages, the PA systematically *nudged* corporates and startups towards the realization of matches. Furthermore, it *navigated hurdles* to overcome arising issues between the participant organizations and on each side individually (e.g., comparable to conflict resolution or mitigation in the literature; Aldrich & Herker, 1977; Colman & Rouzies, 2019). While the navigation of hurdles was reactive, nudging was a preemptive mechanism for steering corporate and startup behavior in the desired direction. The intensity of the interventions towards the corporate sponsors was mainly driven by the PA's trust in their capabilities to identify matching partners and interact effectively with startups.

Finally, I found that the PA's matchmaking process impacted its *(re-)positioning* as a boundary organization with the different participant organizations for the next cohort. Through process repetition, the PA, on the one hand, enhanced its understanding of general and specific asymmetries and, on the other hand, educated the corporate sponsors about startup selection and interaction. Furthermore, the PA perceived that the connections established with corporate units throughout the process as well as successful matches were helpful when reselling the next

matchmaking process round to the sponsors. In the startup ecosystem, the established relationships with rejected ventures were upheld to channel the startups into the upcoming cohort.
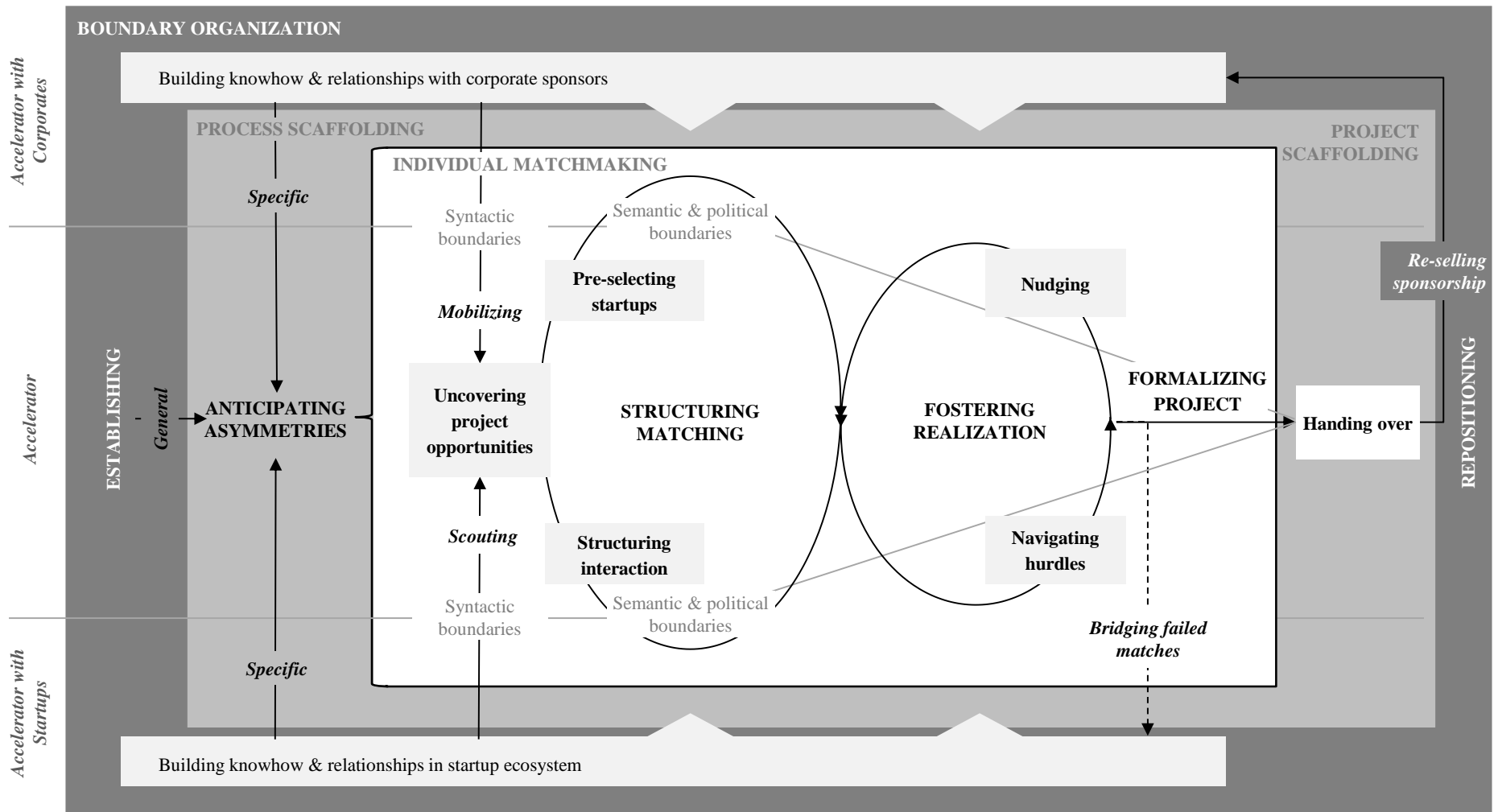
Figure 7: Model of PA's Matchmaking Processes

5. Discussion

My study investigates the process of how PAs match asymmetric applicant startups and corporate sponsors in the pre-cohort phase to arrange structured collaboration projects. I draw on an inductive longitudinal single case study to develop a dynamic process model from the perspective of the PA. The model illustrates how the PA systematically spans boundaries between changing participant organizations (i.e., startups and corporates) on both sides of the boundary. Extending prior work, my model reveals how the accelerator surpasses anticipated organizational asymmetries through an interplay of pre-emptive boundary organizational processes and boundary spanning mechanisms, building on the conditions it established before the cohort (e.g., know-how and relationships). As a result, the accelerator enables collaborations between corporate sponsors and applicant startups to be formed. This study (i) outlines how the PA as an external entrepreneurial support organization creates the necessary conditions to act as a boundary organization, (ii) describes the pre-cohort matchmaking process including the four boundary spanning mechanisms, and (iii) defines the boundaries spanned and the hurdles surpassed.

This section examines the theoretical and practical contributions as well as the limitations of my study and potential further research ideas. This study makes several contributions to the accelerator, (external) corporate venturing, and entrepreneurial support organization literature as well as literature more generally concerned with bridging boundaries. First, I show how my research enriches the literature on accelerators by offering four key contributions: a process perspective, a new accelerator type, a sponsorship-based business model, and a startup pre-selection as core value contributions for corporates (Cohen et al., 2019a; Goswami, Mitchell, & Bhagavatula, 2018; Hallen et al., 2020; Shankar & Shepherd, 2019).

Second, I contribute to the broader literature on (E)CV. The thesis highlights the strategic and cultural advantages of ECV engagement (e.g., Miles & Covin, 2002; van de Vrande et al., 2009) and sketches how external ECV vehicles contribute to the corporate partners' acquisitive learning process towards the development of ECV capabilities or dynamic capabilities (Enkel & Sagmeister, 2020; Keil, 2004). I contribute to the broader literature on corporate venturing by challenging the prevailing idea that only internal corporate units can execute ECV activities contributing to a corporate's ECV goals. I argue that external organizations, such as accelerators, can also perform some of the activities.

Third, related to the literature on entrepreneurial support organizations, I provide a thorough explanation of the curating mechanism "of directing an entrepreneur to the best available or 'best matched' provider of a given resource"[13] (Amezcua et al., 2020, p. 3). Additionally, this study is the first to present mechanisms for establishing and maintaining partnerships with sponsors (Amezcua et al., 2013; Bergman & McMullen, 2021; Flynn, 1993).

Fourth, I describe how my thesis contributes to the literature concerned with bridging boundaries—boundary organization and boundary spanning literatures. In addition to describing how asymmetries broaden organizational boundaries and associated collaboration hurdles (e.g., Buckley & Prashantham, 2016; Carlile, 2004; Kalaignanam et al., 2007; Monteiro & Birkinshaw, 2017; O'Mahony & Bechky, 2008), I show that organizations external to the potential partners (e.g., corporates and startups) can establish the knowledge and relationships to act as a boundary organization (e.g., Guston, 2001; Monteiro & Birkinshaw, 2017; O'Mahony & Bechky, 2008; Perkmann & Schildt, 2015). I also add a more dynamic

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[13] While bridging is a well-recognized mechanism in boundary spanning literature and is defined as "connect[ion] of a new venture and the external environment in ways that increases the new venture's resource endowment, social capital, and legitimacy" (Amezcua, Ratinho, Plummer, & Jayamohan, 2020, p. 3), curating was introduced as a particular form of bridging (Amezcua, Ratinho, Plummer, & Jayamohan, 2020).

understanding of boundary organizations (Guston, 2001; O'Mahony & Bechky, 2008; Perkmann & Schildt, 2015) and a more systematic perspective to boundary spanning literature (e.g., Birkinshaw et al., 2017; Monteiro & Birkinshaw, 2017). Finally, I propose a new perspective on knowledge in boundary spanning, that considers the boundary spanner's implicit knowledge of the participant organizations (i.e., accelerator's knowledge of the corporates) as well as the participant organizations' knowledge of the subject matter (i.e., corporate sponsor's knowledge about startup collaboration). Hereby I integrate different assumptions about knowledge (i.e., knowing, sharing, and trading; Hsiao, Tsai, & Lee, 2012; Kellogg et al., 2006) in boundary spanning literature.

5.1. Theoretical Implications

5.1.1 Accelerators

My thesis makes several contributions to the literature on accelerators in general and more specifically on CAs. The thesis enriches our understanding of accelerators by providing a detailed view of an accelerator's matchmaking or sourcing and selection process, insights about a new CA type, and a sponsorship-based business model design. Furthermore, I explain how accelerators help sponsors overcome limited startup screening and selection expertise.

Accelerator's startup sourcing and selection process. First, I provide a process perspective on accelerators' startup sourcing and selection, revealing key design elements and mechanisms that accelerators apply even before the cohort starts (Cohen et al., 2019a; Goswami et al., 2018; Hallen et al., 2020; Shankar & Shepherd, 2019). Previous literature on CAs roughly outlines the steps of the sourcing and selection process: outbound messaging towards startups, an open call for application, written startup applications using a software tool, and selection by a jury (e.g., Cohen et al., 2019b; Nesner et al., 2020; Pauwels et al., 2016; Shankar & Shepherd, 2019). However, our understanding of design elements, selection criteria, and mechanisms (e.g., influencing decision-making) employed in the pre-acceleration phase is still limited.

Accelerators' competitive selection processes to choose among a commonly high number of applicant startups (Hallen et al., 2020; Moschner et al., 2019) is neither comparable to less formalized, less comparative selection processes of other early-stage ECV vehicles such as CIs[14] (Pauwels et al., 2016) nor the selection process of angel investors and VC firms with a substantially higher level of due diligence (Hallen et al., 2020). The process differences make it difficult to transfer the insights from other literature streams to accelerator literature. However, understanding how accelerators identify and select startups that align with their preferences and those of their sponsors is crucial, as it has a significant impact on the performance of both the accelerator and the accelerated startups (Hallen et al., 2020).

The developed model illustrates key design elements of the accelerator's matchmaking process, the sequence of process steps, and the applied mechanisms (i.e., uncovering [additional] collaboration project opportunities, pre-selecting applicant startups, structuring interaction, formalizing projects). For example, to structure the interaction between the sponsor and the startup the accelerator is engaged in the following process steps: organizing alignment meetings across corporate units, acting as an interface to promising startups, and moderating interactions. While literature identifies that accelerators act as an interface or a bridge between resource providers or sponsors and startups by, for example, connecting them on the demo day (Cohen et al., 2019b; Shankar & Shepherd, 2019), the other two mechanisms offer new insights about the accelerator's sphere and strength of influence. The accelerators actively intervened in the internal processes of sponsor organizations by, for example, organizing and moderating alignment meetings (i.e., organizing alignment meetings, moderating interactions) between internal units, which offers a novel understanding of the accelerators coordinator and advisor

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[14] Startups are admitted to incubators on a rolling basis (Hallen et al., 2020), hence while selection criteria are commonly applied, incubators do not need to employ a process that is fit to compare up to thousands of startups applying simultaneously.

role within the sponsoring organization. Additionally, the active moderation of the exchange between sponsor and startups (i.e., moderating interactions) shows the degree of intervention of the accelerator in the interaction (i.e., the strength of the bridging mechanism). The accelerator applied targeted mechanisms (e.g., nudging towards collaboration projects, navigating [potential] collaboration hurdles) or interventions in most process steps to ensure that matches are successfully identified and realized in collaboration projects. The described mechanisms enrich the accelerator literature, showing the vehicles' impact on the realization of matches between sponsors and startups beyond mere process execution. The comprehensive outline of a scouting and selection process' design elements, sequence of process steps, and targeted mechanisms, to my knowledge, offers novel insights to general accelerator as well as CA literature and addresses calls for further research (e.g., Cohen et al., 2019b; Shankar & Shepherd, 2019).

PA as a new accelerator type. Second, I provide new insights on CAs by introducing PAs as a new accelerator type that offers startup-corporate matchmaking as a core service to multiple sponsoring corporates before the start of a fixed-term, cohort-based program (Cohen et al., 2019b). While prior studies have elaborated on how accelerators, among other services, connect startups and relevant actors in the network as a source of knowledge and resources (e.g. Goswami et al., 2018; Hallen et al., 2020; Krishnan et al., 2021), these connections are established as a service for admitted startups once the cohort starts. Examples include consultations with different stakeholders facilitating entrepreneurial learning (Hallen et al., 2020), structures fostering generalized peer-to-peer exchange (Krishnan et al., 2021), or more generally establishing connections to the regional ecosystem (Goswami et al., 2018). My study moves the strategic establishment of connections—namely matchmaking for collaboration projects—into the center of the external accelerator type's service offering. I show how a program that is legally and structurally independent (Cohen et al., 2019b) from multiple

corporate sponsors (e.g., Plug and Play) functions as a multi-stakeholder matchmaking organization.

CA business model. Third, I provide insights into the CAs' business model—which is currently a neglected topic in accelerator literature according to Cohen et al. (2019b)—by outlining how the accelerator takes over the matchmaking process for multiple corporates sponsoring the program for a minimum of two years. While the literature suggests that accelerators finance their operations by taking startup equity (Cohen et al., 2019b), this model is recognized as potentially unsustainable since the equity shares are typically small, potentially diluted, long-term oriented, and the startup companies have a high failure rate (Cohen et al., 2019b). I show that corporate sponsorship offers an economically sustainable alternative. The case accelerator operates for more than six years financed by corporates paying a service fee per cohort dependent on the number of startup collaboration areas. The accelerator stabilizes its financing by reselling its matchmaking services to corporate sponsors, which entails the accelerator trying to expand its connections to corporate functional units and increasing the trust in its services through good matchmaking results throughout several cohorts. Whereas this was commonly possible for several cohorts, the corporate sponsors built their expertise in selecting and collaborating with startups through the partnership with the accelerator, and as a consequence, some partially terminated the partnership as it was no longer needed. This forced the accelerator to continuously look for new corporate sponsors. Therefore, a commercial, sponsorship-based financing model might offer accelerators an opportunity to stably finance operations, but it likely only fits some accelerator types (e.g., VC-sponsored accelerators with an interest in accessing high-potential startups in their focus area).

Sorting startups as new accelerator role. Fourth, from the perspective of the accelerators' corporate sponsors, I introduce another important role of accelerators before the start of the cohort (Cohen et al., 2019a): sorting startups based on considerations of sponsoring corporates.

This role helps corporate sponsors overcome their limited expertise in startup selection. Research shows that CAs scout startups to apply for the cohort (Shankar & Shepherd, 2019). With sourcing services for the corporate parent, they shape the pipeline of applicant startups, hence the final cohort composition (Moschner et al., 2019; Shankar & Shepherd, 2019). In contrast, the literature proposes that the actual startup selection is conducted by a jury (e.g., involving the corporate management) and not influenced by the accelerator (Moschner et al., 2019; Shankar & Shepherd, 2019). I show that the accelerator is not only responsible for startup sourcing but is also responsible for the pre-selection of applicant startups. During the assessment, the gut feeling of experienced accelerator employees, similar to observations in the literature on business angels (Huang, 2018), plays a crucial role in evaluating the startup potential and match to the corporate sponsor. This intuition referred to as "dynamic expertise-based emotion-cognitions specific to the entrepreneurship context" (Huang, 2018), is an important factor in the decision-making process while being accompanied by a criteria-based assessment considering the performance and economic potential as well as the fit to the corporate collaboration area. By providing numerical and verbal pre-evaluations of the applicant startups, the accelerator nudges the corporates' evaluations in a certain direction or reduces the number of startups screened by the corporate. As a result, the accelerator significantly influenced corporate employees in their decision-making by bridging competency gaps, enabling informed decisions on innovation projects or investments, and educating them on selection criteria and processes.

5.1.2 (External) Corporate Venturing

My thesis contributes to the ECV literature by showing that accelerators are likely to not only contribute to corporate short-term financial goals, as suggested in the literature (Miles & Covin, 2002), but also to strategic goals linked to corporate innovation, organizational development, and cultural change. Additionally, I contribute to the corporate venturing literature more

broadly by challenging the fundamental assumption that ECV activities can only be conducted by internal corporate units (e.g., Schildt et al., 2005; Kuratko et al., 2009; Narayanan et al., 2009). Instead, I show that external organizations such as accelerators also play a role in performing (E)CV activities.

ECV contribution to corporate strategic goals. First, while the literature suggests that ECV vehicles are better suited in comparison to internal corporate venturing vehicles to reach short-term financial goals and to foster strategic objectives (Miles & Covin, 2002), this thesis shows that ECV vehicles can also contribute to achieving strategic goals such as corporate-startup collaborations or organizational learning.

The literature on corporate venturing suggests that internal corporate venturing modes are beneficial for promoting organizational development and fostering cultural change toward innovation (Miles & Covin, 2002). To achieve strategic objectives such as market exploration or the integration of innovations into the corporate organization, a combination of internal corporate venturing and ECV is suggested (Miles & Covin, 2002). My study suggests that CAs enable collaboration projects between corporates and startups. These projects are intended to be the starting point for long-term collaborations, such as buyer-supplier relationships or joint product development projects between corporates and startups. While a subsequent investment in the startup by the corporate sponsor is one potential long-term outcome, fostering financial returns for the corporates is not the accelerator's pronounced goal. This finding contradicts the perspective presented in the literature (Miles & Covin, 2002), showing that ECV vehicles can potentially contribute to more strategic innovation goals. As a secondary benefit of the partnership, the accelerator describes that corporate employees who participated in multiple cohorts developed their ability to select and collaborate with startups as they learned from the accelerator. Furthermore, the accelerator in this research sought to involve a wider range of corporate employees in the matchmaking process to cultivate an innovation culture and

openness towards corporate-startup engagement. Therefore, employee or organizational learning, as well as cultural development, are considered beneficial side effects of ECV activities, contrary to previous implications in the literature (Miles & Covin, 2002).

External organizations performing ECV activities. Second, I contribute more broadly to the literature on corporate venturing. I challenge the prevailing assumption in literature that only internal corporate units can fulfill ECV activities (e.g., Schildt et al., 2005; Kuratko et al., 2009; Narayanan et al., 2009) by demonstrating that external organizations, such as accelerators, can establish capabilities, structures, and processes to partially take over the role of an internal corporate venturing unit.

ECV literature assumes that vehicles to support a corporate's ECV activities need to be internal to or affiliated with the corporate (Schildt et al., 2005), such as internal CIs, CAs, or CVC units. ECV activities or capabilities include discovery or sensing (Enkel & Sagmeister, 2020; O'Connor & DeMartino, 2006), sizing (Enkel & Sagmeister, 2020), incubation, and acceleration of external innovation opportunities (O'Connor & DeMartino, 2006) as well as the assimilation or absorption into the corporate organization (Kim et al., 2021). Corporate incubators and accelerators mostly mirror these activities including search and selection, incubation/acceleration, and integration into the corporate organization (e.g., Becker & Gassmann, 2006b; Grimaldi & Grandi, 2005; Hughes et al., 2007; Shankar & Shepherd, 2019). However, my study challenges the existing view and suggests that external entities not affiliated with a corporate parent can also partially assume the role of an internal corporate venturing unit, supporting the corporate in the creation of new businesses by matching with external startup partners—in other words, the sensing and sizing role. I show that by managing the matchmaking process the accelerator partially took over the discovery of external innovation opportunities for its corporate sponsors. In this manner, it fulfilled a core activity or capability commonly performed by comparable ECV vehicles, such as CIs (e.g., Becker

& Gassmann, 2006b), that also source and identify startups that match the corporate parent's strategic goals. The PA studied not only built the interface to startups, but it also managed the startup selection process between the corporate units involved, by for example setting up a joint startup evaluation tool, organizing decision meetings across corporate units, and aggregating decision results.

5.1.3 Entrepreneurial Support Organizations

Accelerators are one type of entrepreneurial support organization acting as mediators between startups and organizations in their environment to lubricate the startups' access to resources, social capital, or legitimacy. Building on this notion, my study provides novel insights for this broader literature stream (Amezcua et al., 2013; Bergman & McMullen, 2021; Flynn, 1993).

Curating function of entrepreneurial support organizations. First, I broaden our understanding of the recently identified curating function of entrepreneurial support organizations. As a particular type of the bridging function defining an entrepreneurial support organization's efforts to connect a startup and the external environment to increase its resource endowment, social capital, and legitimacy, curating describes the selective connection of startups to the best available resource providers (Amezcua et al., 2013; Amezcua et al., 2020; Dutt et al., 2016; Jourdan & Kivleniece, 2017). My study provides insights into how the accelerator as an entrepreneurial support organization dynamically curates potentially matching corporate-startup partners (e.g., through focused scouting or pre-selection), helping them to identify the best match (Amezcua et al., 2020; Dutt et al., 2016; Jourdan & Kivleniece, 2017). Going beyond the current conceptualization of curating, my study identifies the new mechanism of fostering the collaboration's realization (i.e., nudging and navigating hurdles).

Relationships between entrepreneurial support organizations and sponsors. Second, I offer valuable insights for the nascent research on the relationships between entrepreneurial

support organizations and sponsors (e.g., corporates; Bergman & McMullen, 2021; Cohen et al., 2019b; Shankar & Shepherd, 2019). To my knowledge, studies offering a detailed consideration of sponsors (referring to studies as classified by Bergman & McMullen, 2021) take the existence of relationships between the two actors for granted—partially because studied entrepreneurial support organizations are founded by or are organizationally affiliated to the sponsors (e.g.Kolympiris & Klein, 2017; Shankar & Shepherd, 2019; Weiblen & Chesbrough, 2015). I provide initial insights into the formation and evolution of relationships between entrepreneurial support organizations and sponsors in an extreme context, as the PA, as an independent external organization, had to continually establish and sustain relationships with changing corporate sponsors. In terms of the emergence of relationships, I detail how the accelerator's embeddedness and engagement within the ecosystem facilitate the initiation of contacts with various corporate sponsors.

5.1.4 Bridging Boundaries (Boundary Organizations and Boundary Spanning)

Finally, my dissertation combines and extends the previously separated literature streams on boundary organizations and boundary spanning. I specify how organizational asymmetries influence organizational boundaries and boundary spanning, outline that third-party actors can also bridge external organizational boundaries, add different perspectives to boundary organization and boundary spanning literature, and integrate the assumptions about knowledge in boundary spanning literature.

Relationship between boundaries and organizational asymmetries. First, I specify how organizational asymmetries impact boundaries and boundary spanning between organizations. Boundary spanning literature often describes how complementary units or organizations span boundaries between asymmetric organizations (e.g., corporates and startups, corporates and open source communities, and two corporates in the context of an acquisition; Colman & Rouzies, 2019; Klueter & Monteiro, 2017; Monteiro & Birkinshaw, 2017; O'Mahony

& Bechky, 2008) without specifying which asymmetries exist between the organizations. Additionally, these studies do not demonstrate how the concepts of organizational asymmetries, related boundaries, and resulting collaboration hurdles are interrelated. This thesis illustrates, in the context of corporates and startups, how organizational asymmetries broaden semantic, syntactic, and political boundaries (Carlile, 2004; Kellogg, Orlikowski, & Yates, 2006) and augment the complexity of boundary-spanning by leading to collaboration hurdles that are unlikely to occur in interactions between symmetric organizations. Therefore, I establish a connection between the concepts of asymmetries and boundaries by proposing that asymmetries broaden boundaries and complicate the boundary-spanning process.

Third-party actors bridging multiple external organizational boundaries. Second, I contrast the implicit assumption prevalent in both literature streams—boundary spanning in boundary organization literature—that affiliation to at least one participating organization is required and independent third-party actors cannot bridge external organizational boundaries (Guston, 2001; Monteiro & Birkinshaw, 2017; O'Mahony & Bechky, 2008; Perkmann & Schildt, 2015). I show that the independent accelerator established itself as a boundary organization by building up matchmaking as its core service towards corporates and startups and leveraging and nurturing relationships with organizations on both sides of the boundary. Additionally, I sketch how the standalone accelerator developed relevant expertise in working with corporates and startups as asymmetric organizational types in general as well as the specific participant organization on both sides of the boundary. Considering the proliferation of different types of entrepreneurial support organizations (Bergman & McMullen, 2021; Hallen et al., 2020) that potentially act as external boundary organizations, it is crucial to obtain deeper insights into how such organizations develop the conditions for spanning boundaries effectively.

Dynamic understanding of boundary organizations and systematic perspective on boundary spanning. Third, by combining both literature streams I show how boundary organizational structures, procedural scaffoldings, and individual boundary spanning mechanisms were intertwined to create matches between changing asymmetric organizations on both sides of the boundary. My study adds a dynamic process view to the boundary organization literature by outlining how the accelerator employs and adapts organizational practices over time by learning from its experiences with changing organizations. This dynamic view extends previous literature that primarily described how custom-built, stable organization structures are created to bridge boundaries (Guston, 2001; O'Mahony & Bechky, 2008; Perkmann & Schildt, 2015). Furthermore, I describe a more systematic procedural approach to boundary spanning, adding to previous studies that assess boundary spanning in the context of individual tasks or projects (Birkinshaw et al., 2017; Lopez-Vega et al., 2016; Monteiro & Birkinshaw, 2017). I show how the accelerator systematically arranges boundary spanning activities into a process scaffolding, which structurally reflects previously anticipated needs and preempts hurdles of multiple actors. The balance between a stable process or project scaffolding, which was designed to mediate between organization types, rather than dedicated organizations, and its adaptability to individual interests and organizational practices of the particular participant organizations enabled the PA to realize collaborations between changing participant organizations.

Role of knowledge types in boundary spanning. Fourth, my study provides an integrating view of the assumptions about knowledge underlying boundary spanning models discussed in the literature: knowing, sharing, and trading (Hsiao et al., 2012; Kellogg et al., 2006). Our understanding of boundary spanning often relies on a single assumption regarding knowledge exchange (Hsiao et al., 2012; Kellogg et al., 2006), without considering that diverse types of knowledge can be exchanged differently. I suggest a novel perspective, by showing that how

knowledge is exchanged depends on the boundary spanner's implicit knowledge about the participating organizations and the participating organizations' knowledge about the boundary spanning process.

Specifically, I observed how individualized interventions such as nudging or mitigating were possible, because the accelerator had the implicit knowledge about the corporates' and startups' rules of the game and could therefore engage in subtle brokerage (comparable to Hsiao et al., 2012; Nag, Corley, & Gioia, 2007; Pawlowski & Robey, 2004). My research indicates that the level of corporate sponsor expertise in startup collaborations impacts the way accelerators utilize their implicit knowledge. When the sponsoring organizations are relatively inexperienced in working with startups, the accelerator tends to engage in subtle brokerage tactics, such as nudging and mitigating. In the case of corporate sponsors who had participated in more than two cohorts and had greater experience, I noticed that the accelerator intervened or brokered less frequently. Instead, they focused on translating or transforming knowledge in complex areas and directly traded specific types of information.

Regardless of the level of startup collaboration knowledge possessed by corporate sponsors, the accelerator, as an expert in both worlds, had to translate and/or transform certain information before it could be shared with the startups or corporate sponsors (comparable to knowledge translation as described by Bechky, 2003; Carlile, 2002; Carlile, 2004). An example of relatively complex information that required transformation and translation to establish a shared understanding and interest between corporates and startups was the startup collaboration areas. Other types of knowledge were simply transferrable and could be traded, utilizing trading zones as coordination structures to spanned boundaries (Hsiao et al., 2012; Kellogg et al., 2006). For instance, information about and evaluations of the applicant startups were made legible through a software tool for startup evaluation, which served as a trading zone that structured the

information exchange between the accelerator and all corporate sponsors (comparable to knowledge transfer as described by Carlile, 2004; Hsiao et al., 2012; Kellogg et al., 2006).

5.2. Practical Implications

This thesis offers various practical implications for accelerators, corporates engaging in ECV, and startups seeking to collaborate with corporates.

5.2.1 Accelerators

This thesis offers insights into the establishment and management of general, corporate, and external CAs. First, I show that accelerators can build a business model around matchmaking services for corporates. The studied accelerator could be established and sustained around matchmaking as a core service and value proposition for corporate sponsors. Corporates inexperienced with startup collaborations particularly recognize the value of working with outside experts when starting to engage with startups. Therefore, accelerator managers can build on the recognized market need and offer matchmaking or similar services to corporate sponsors.

Second, I suggest that accelerators can financially stabilize their operations through ongoing sponsorship models, as a substitute or in addition to startup equity-based financing as a commonly discussed accelerator business model. This work offers a description of how a corporate sponsorship model can look (e.g., multiple corporate sponsors, startup matchmaking as a service offering, and number of startup collaboration areas to determine financial contribution) and which value accelerators can offer in exchange for corporate sponsorship. Particularly, this case demonstrated that it is important for accelerators to (re-)sell the services to corporate sponsors over multiple cohorts to stabilize cash flow and account for the corporate's and accelerator's learning process—matchmaking results improve over time. To achieve this, accelerator managers should focus on engaging the corporate organization broadly

(i.e., innovation units, different functional units, and management/project sponsors) and optimizing matchmaking outcomes throughout the cohorts to enhance corporate satisfaction.

Third, the thesis presents a blueprint for a matchmaking process between startups and corporates or other potential sponsors. This matchmaking process blueprint is relevant for accelerators and can also serve as an example for other entrepreneurial support organizations, such as incubators aiming to match startups with other resource providers. I offer accelerator managers general key success factors for matchmaking, a best-practice design for the matchmaking process, and software tools, and I suggest targeted intervention mechanisms to facilitate the matchmaking process. When designing the matchmaking process, CAs can benefit from reflecting on the needs of corporates and startups in the matchmaking process design. Doing so allows the accelerator to pre-empt typical hurdles arising in case of direct interaction between the parties (e.g., the long timeline leading to dropout of startups, and cumbersome contract negotiations). For example, corporates often involve many departments and managers to select and cooperate with startups. Those stakeholders expect the matchmaking process to be highly structured (e.g., decision meeting structures, startup meeting formats) and supported by user-friendly software tools to view applications and rate the startups. Alternatively, startups favor a short and rigorously enforced process timeline and a pre-defined process outcome (i.e., collaboration project) to avoid wasting resources. Moreover, the collaboration terms should reflect the startups' constraints (e.g., no exclusivity). In general, the matchmaking process design, should follow clear timelines, have meeting and decision structures, and reflect a tasks split between the accelerator, startups, and corporates. The process can benefit from software-based support to manage interfaces. By utilizing an integrated software platform for managing applications, evaluating startups, and providing feedback, accelerators can greatly improve process efficiency.

Throughout the matchmaking process when communicating in both directions (e.g., adjusting public messaging) or managing the interaction (e.g., translating in meetings), accelerator managers should keep differences in culture, behavior, and language in mind potentially leading to misunderstandings and conflicts. Finally, accelerators can use different intervention mechanisms to foster the realization of collaborations between startups and resource providers, especially corporates. The accelerator in this study shaped the corporate collaboration areas (i.e., functions, solutions, technologies) as the basis for subsequent startup scouting. Therefore, accelerators can build on their expertise to discuss and steer corporate sponsors toward innovation areas for which relevant startup partners can be identified (i.e., startup markets). Accelerators can also influence the behavior and steer the decisions of corporates and startups through small nudging rituals (e.g., referring best startups to corporates, consciously addressing their fear to collaborate with startups) as well as interventions such as mediation in case of conflicts.

5.2.2   Corporates

For corporates, this thesis offers insights about typical hurdles arising in the initiation of startup collaborations, positions external accelerators as relevant partners for realizing ECV goals, and provides a matchmaking process blueprint. First, I describe asymmetries between corporates and startups and demonstrate the hurdles that commonly arise from these asymmetries. Understanding asymmetries to potential startup partner organizations will help corporates to prevent matchmaking or interaction hurdles when designing and running ECV units.

Second, I show how a partnership with an external startup and collaboration expert (e.g., an accelerator) is beneficial for realizing short-term ECV goals and improving mid- to long-term corporate capabilities. In the short term, collaborating with an accelerator as an expert for startup markets as well collaborations can help especially corporates inexperienced in startup collaboration in creating transparency about current technological developments, gaining

access to and position in the startup ecosystem, as well as meeting and collaborating with startups. In the mid-to-long term, corporates can learn from the expert vehicles how to establish matchmaking structures and processes to effectively interact with asymmetric startups.

Third, the boundary organization and matchmaking process blueprint I provide in this thesis can also help corporates to improve internal structures and processes in incubators, accelerators, and potentially even CVC units. In addition to describing structural elements, I outline key success factors. For example, when searching and selecting startup partners, formalized startup collaboration areas outlining the technologies, applications fields, search terms, and example companies can help to create clarity across the involved stakeholder groups. The functional units can critically reflect upon their innovation needs, and the scouting entity can effectively comprehend and adjust those needs as necessary. Furthermore, corporates should assemble a management team for the ECV vehicle that is skilled in navigating both the corporate and startup realms. The ECV team additionally needs a network, knowledge, and relationships within the corporate organization and externally in the startup ecosystem. Processes (in particular the matchmaking process) and structures should be adjusted to startups' needs to attract promising startup partners. Although applying the observations to internal corporate venture vehicles may be challenging, the accelerator that was studied highlighted that startups highly value the accelerator's role as an unbiased mediator. Therefore, internal corporate venturing units should make a conscious effort to adopt the role of a mediator between startups and functional units rather than solely promoting corporate interests.

5.2.3 Startups

For startups, I position external CAs as impartial moderators in the corporate matchmaking process, navigators in potential corporate partner organizations, and knowledgeable coaches. Therefore, startups should consider engaging with corporates through ECV vehicles. First, the investigated accelerator provides an illustrative example of the impartiality of ECV vehicles.

For example, even though the accelerator was sponsored by corporates, the matchmaking process and collaboration project design reflected startups' needs. I suggest that accelerators can be helpful for startups to represent their interests vis-à-vis the corporate sponsor.

Second, ECV vehicles create new corporate collaboration opportunities for startups—sometimes outside the corporate's core business areas—not available when startups directly approach the corporate. Therefore, ECV vehicles can broaden the portfolio of potential corporate collaboration partners for startups.

Third, I position accelerators as a door into corporate organizations contrary to the common perception, solely as engines driving entrepreneurial learning and financing. The accelerator connected the applicant startups to a corporate with industry and/or product fit and pronounced interest in startup collaborations. The startups were navigated through the corporate organization and connected with a relevant business unit to start a collaboration project. This process saved the startups time, pre-empting process delays, negotiation efforts, and sunk costs.

Fourth, the startups benefited from the accelerator's coaching on how to interact with corporates. Therefore, startups can benefit from engagement with CAs as knowledgeable coaches and advocates towards corporates. Relatedly, I show that engaging with and sustaining relationships with accelerators and other ECV vehicles can help startups in overcoming common hurdles and provide an efficient path toward securing corporate customers or partners.

5.3. Limitations and Future Research

While my qualitative research design was suited to study the accelerator's complex process to match corporates and startups across organizational boundaries over time, the generalizability of my findings remains limited. Thus, large-scale quantitative work should test the proposed boundary spanning mechanisms and provide insights into contextual factors that might impact which mechanisms accelerators apply.

The described matchmaking process is unique in that the accelerator conducts a one-on-one matching of pairs—a corporate sponsor following particular innovation goals and applicant startups. First, it is interesting if the matchmaking process and the observed boundary spanning mechanisms apply across other CA types or for accelerators with other sponsors (Cohen et al., 2019b; Kanbach & Stubner, 2016; Moschner et al., 2019; Pauwels et al., 2016). For example, while the external accelerator in this study has corporate sponsors from different industries, accelerators specializing in one industry might benefit in anticipating (specific) asymmetries but may need to focus on repositioning because of the limited number of potential sponsors. In contrast, internal CAs might be able to build on already existing internal know-how (e.g., about corporate strategic goals; Shankar & Shepherd, 2019, Mahmoud-Jouini et al., 2018) and relationships, making the establishment and repositioning in the corporate organization easier (e.g., involvement of managers in the jury or as mentors, involvement of business units in collaboration projects; Mahmoud-Jouini et al., 2018; Shankar & Shepherd, 2019). However, the corporate internal entities might lack know-how and relationships in the startup ecosystem, complicating the anticipation of asymmetries to the small and young organizations in general.

Future research can test the mechanisms across different CA types. If other organizations sponsor the accelerator (e.g., investors including VCs or angels, universities, governments, entrepreneurs, and not-for-profit foundations; Cohen et al., 2019b), an elaborate matchmaking process and some core mechanisms might lose their relevance (e.g., anticipating, formalizing). It is likely that most sponsors will not aim for formalized startup collaboration projects following other goals (e.g., investors aiming for improved conditions or lower costs of startup access; Cohen et al., 2019b) and therefore do not require an elaborated one-on-one matchmaking process. Nonetheless, accelerators will likely still benefit from selecting startups with a match to the sponsor's interests and potentially involve the sponsor in the startup selection (e.g., as a jury member), implying that some matchmaking services remain relevant

across sponsors in the pre-cohort phase (e.g., structuring, fostering). Future research can investigate which type of matchmaking services and respective mechanisms are relevant for accelerators with different sponsors.

Second, linking to the previous point, while my research setting provided a unique opportunity to study the accelerator as a moderator between different corporates and startups, it is possible that the theory developed might not generalize to other settings without such a clear temporal and programmatic scope. When selecting startups, CIs consider the corporate's strategic goals (Becker & Gassmann, 2006b) as well as financials, market, and management team-related criteria (Aerts et al., 2007). Furthermore, startups are commonly admitted to incubators individually and on a rolling basis compared to the accelerator's cohort logic (Cohen et al., 2019b; Hallen et al., 2020). Therefore, no process scaffolding structuring the comparative selection of hundreds of startups is needed, while single mechanisms likely remain relevant. For example, uncovering collaboration or connection opportunities within the corporate organization or anticipating the asymmetries between the startup and the corporate organization during the startup selection will likely benefit throughout the incubation the access to and after the incubation the integration into the corporate organization (e.g., Chen & Kannan-Narasimhan, 2015; van Burg et al., 2012). Moreover, formalizing collaboration projects with corporate units might be relevant for some CI types (Chen & Kannan-Narasimhan, 2015).

Whereas CVC units commonly focus on later-stage startups, they also follow financial as well as strategic goals (e.g., learning about emerging technologies and changing market dynamics or fostering innovation activities; Dushnitsky & Lenox, 2005; Narayanan et al., 2009) and employ a highly structured and competitive selection process (e.g., Fried & Hisrich, 1994; Petty & Gruber, 2011) with more comprehensive due diligence than accelerators (Hallen et al., 2020). CVC units oriented towards a strategic goal also select startups that contribute to this outcome in the long run (Yang et al., 2014) and can function as a link between corporate units and

startups (Souitaris & Zerbinati, 2014; Souitaris, Zerbinati, & Liu, 2012). Therefore, the units likely operate with similar structures (e.g., process scaffolding, individual interventions) as well as mechanisms (e.g., anticipating, structuring, fostering) and also require legitimation mechanisms (e.g., establishing and repositioning) to moderate between a corporate parent and startups. Therefore, my new boundary spanning mechanisms (e.g., anticipating and fostering) should be tested in future research in the context of other ECV vehicles or entrepreneurial support organizations such as (corporate) incubators, CVC units, or science parks.

Third, the applicability of the discovered mechanisms beyond the pre-cohort matchmaking process to select startups for a program is of interest. Other settings where accelerators bring startups and external parties together (e.g., services concerning network establishment, and coaching) could help to deepen our still broad understanding of buffering, bridging, and curating role of entrepreneurial support organizations (Amezcua et al., 2013; Amezcua et al., 2020). Even if matchmaking proves not to be relevant for differently sponsored accelerators, we know that buffering, bridging, and curating mechanisms are applied by incubators throughout the incubation process (Amezcua et al., 2013; Amezcua et al., 2020). Therefore, some of the discovered mechanisms (e.g., structuring interaction, nudging, navigating hurdles) are also likely employed in differently sponsored accelerators or other entrepreneurial support organizations throughout the program to foster the interaction of startups with mentors, investors, or other resource providers. Future research can test this assumption.

Finally, my study focused on the perspective of the PA as well as adjacent entrepreneurial support organizations. Relatedly, integrating the perspective of applicant startups and corporate sponsors to investigate the impact of the boundary spanning mechanisms would broaden our understanding of the accelerator's added value, especially for sponsors as recently demanded by Bergman and McMullen (2021). Potential avenues to investigate from the corporate perspective include the impact of the accelerator's matchmaking on corporate employees'

immediate behaviors or decision-making throughout the process. Additionally, the corporate learning effects mentioned by the accelerator would be of interest: How does accelerator engagement affect the corporate employees' ability to effectively collaborate with startups? How does accelerator engagement affect the sponsors' ECV organizational practices (e.g., ECV unit or process design)? Additionally, quantitative studies should test the short- and long-term impact of corporate-startup collaboration projects in the context of accelerators on corporate innovation performance. While I observed how collaboration projects were realized after the matchmaking process, it remains unclear if the collaboration projects led to subsequent engagement between the startup and the corporate sponsor (e.g., in projects, buyer-supplier relationships, investments, and acquisitions). From the perspective of the corporate, it would additionally be of interest to understand how startup collaboration projects influence innovation performance within the corporate organization. Innovation performance—general and radical—can be influenced directly by integrating the startup innovation, such as through acquisition. Moreover, there can be an indirect effect on corporate internal innovation performance through the development of sensing or dynamic capabilities (Enkel & Sagmeister, 2020), entrepreneurial orientation, or cultural change (Miles & Covin, 2002). Therefore, future research should study the short-term value-added of the accelerator's boundary spanning for sponsors (e.g., decision-making, behavioral impact, and learning) and startups as well as the long-term impact of startup collaborations on corporate innovation performance.

5.4. Conclusion

While corporate-startup collaborations can be mutually beneficial (e.g., Doz, 1987; Hoang & Antoncic, 2003; Hogenhuis et al., 2017; Weiblen & Chesbrough, 2015), the initiation is particularly challenging because the organizational types are asymmetric in size, scale, age, and/or resource base (Kalaignanam et al., 2007; Katila et al., 2008; Yang et al., 2014). Recently, platform accelerators have started to offer pre-cohort matchmaking services between multiple

corporate sponsors and startups leading to collaboration projects. My thesis offers a dynamic model that describes the conditions and a sequence of four boundary spanning mechanisms that enable this process. Additionally, I show which boundaries and associated hurdles the platform accelerator spanned between corporates and startups as asymmetric organizations throughout the process.

The platform accelerator created the conditions for the matchmaking process by *(re)establishment as a boundary organization* able to create and sustain knowledge about and relationships with the changing participant organizations. To account flexibly for the individual needs of corporate sponsors and applicant startups while managing multiple changing actors throughout the process, the platform accelerator intertwined *standardized scaffoldings* with *focused individual boundary spanning mechanisms*. Effective matching between asymmetric corporates and startups was possible because the platform accelerator *anticipated* in the design of the scaffoldings the needs and hurdles usually arising in direct interactions between the asymmetric organizational types. The standardized process scaffolding *structured matching* and the project scaffolding *formalized* the collaboration projects. Individualized mechanisms *fostering the realization* of matches were increasingly used towards the end of the matchmaking process. My thesis offers novel theoretical insights into the literature on general and corporate (sponsored) accelerators, (external) corporate venturing, entrepreneurial support organizations, boundary spanning, and boundary organizations. Additionally, this research has practical implications for accelerator managers, corporates with external corporate venturing activities, and startups aiming for corporate collaboration.

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Appendix

A1.   Literature Review Method

I employed a systematic literature review approach following four steps: (i) sample collection and enrichment, (ii) sample screening, (iii) coding, and (iv) analysis. To generate a sample I used the journal database Web of Science, which covers articles across several disciplines. I conducted a search of the titles, abstracts, and keywords of the articles using several inquiries with terms capturing general ECV research and research on the single vehicles focusing on articles published from January 1991 to June 2022 (compare Appendix A2 for a keyword overview). The results were filtered by publication title including peer-reviewed general management, entrepreneurship, and innovation journals following the examples of Shepherd et al. (2015) as well as of Narayanan et al. (2009); compare Appendix A2 for a journal overview. An initial sample of 368 articles was then filtered by eliminating duplicates, examining titles and abstracts, and finally examining the full text based on a set of criteria (compare Appendix A2 for a criteria overview), and this process identified 41 relevant articles. Building on existing literature reviews and core articles I engaged in a back and forward search for additional literature to enrich the sample. Specifically, I searched for the more recent literature streams on CA, hackathons, and CWS, adding relevant articles from journals not considered in the previous step. The manual search yielded 37 additional articles. In the final two steps I closely read the 78 identified articles and coded them along several dimensions, managing the procedure in Microsoft Excel. Exemplary coding dimensions include the type of vehicle (including ECV, hackathon, CWS, CI, CA), the methodological approach (e.g., qualitative or quantitative), the research questions and results, the theories mentioned, and the category. Table Appendix A3 lists the articles including a categorization.

A2. Literature Review Syntax and Criteria

Category of Review Criteria	Criteria for Inclusion or Exclusion of Article in Sample
Keyword list (used for search in Web of Science)	ECV: (external and corporate and venture*)
	Hackathons: (hackathon* or makeathon*)
	Co-working spaces: (co-working and space*)
	Incubators: ([business and incubat*] or [corporate and incubat*])
	Accelerators: (corporate and accelerat*)
Journals	Following the example of Narayanan et al. (2009) and Shepherd et al. (2015): *Academy of Management Journal*, *Academy of Management Review*, *Administrative Science Quarterly*, *American Economic Review*, *Entrepreneurship Theory and Practice*, *Journal of Business Venturing*, *Journal of Engineering and Technology Management*, *Journal of Finance*, *Journal of Financial and Quantitative Analysis*, *Journal of Management*, *Journal of Management Studies*, *Journal of Marketing*, *Journal of Small Business Management*, *Management Science*, *Organization Science*, *Proceedings of Academy of Management*, *Rand Journal of Economics*, *Research Policy*, *Strategic Management Journal*
	Based on relevance for conversion (# of articles published about ECV in journal based on initial search request): *Entrepreneurship and Regional Development*, *Economic Development Quarterly*, *Family Business Review*, *International Entrepreneurship and Management Journal*, *International Journal of Entrepreneurial Venturing*, *Journal of Business Research*, *Journal of Product Innovation Management*, *Journal of Technology Transfer*, *Small Business Economics*, *Technovation*, *Technological Forecasting and Social Change*
ECV related	Focus on ECV, meaning the collaboration between corporates and startups compared to fostering internal innovation/[research and development] projects or internal corporate venturing
	ECV defined according to Kuratko and Audretsch (2013): "External corporate venturing refers to entrepreneurial activity in which new businesses are created by parties outside the corporate and subsequently invested in (via the assumption of equity positions) or acquired by the corporate. These external businesses are typically very young ventures or early growth-stage firms."
	Internal coporate venturing defined according to Kuratko and Audretsch (2013): "With internal corporate venturing, new businesses are created and owned by the corporation. These businesses typically reside within the corporate structure, but, occasionally, may be located outside the firm and operate as semi-autonomous entities."
	Clear focus on one or multiple early-stage ECV vehicles including:
	Hackathons: "accelerated innovation processes that bring together individuals to voluntarily develop new products to solve specific and ambitious challenges in an extremely limited and ad hoc time frame (72 hours or, in some cases, less)." (Lifshitz-Assaf et al., 2021)
	Co-working spaces: "[…] subscription-based workspaces in which individuals and teams from different companies work in a shared, communal space." (Howell, 2022)
	Accelerators: "A fixed-term, cohort-based program for startups, including mentorship and/or educational components, that culminates in a graduation event." (Cohen et al., 2019b)
	Incubators: "A business incubator is a facility that provides affordable space, shared office services, and business development assistance in an environment conducive to new venture creation, survival, and early-stage growth." (Allen & McCluskey, 1991)

Close corporate involvement with vehicle	Intensive corporate involvement (e.g., vehicle ownership or sponsorship) as compared to mere support (e.g., through mentorship, as network partner)
Evident entrepreneur/ startup involvement	Concerns corporate-startup interaction involving entrepreneurs or startups at any stage of development cycle (pre-seed to late stage venture)

A3.   ECV Sample Article

ECV Vehicle	Content Category	Paper Classification Count	Studies in Category
ECV	Antecedents	6 (23%)	An et al. (2018), Prügl and Spitzley (2021), Titus et al. (2017), Titus et al. (2020), Tong and Li (2011), van de Vrande et al. (2009)
	Concept	10 (38%)	Bergman and McMullen (2021), Biniari et al. (2015), Gutmann (2019), Hill and Birkinshaw (2008), Miles and Covin (2002), Narayanan et al. (2009), Ramírez-Pasillas et al. (2021), Randolph et al. (2017), Weiblen and Chesbrough (2015), Weiss and K. Kanbach (2021)
	Mechanisms	4 (15%)	Hornsby et al. (2013), Kim et al. (2021), O'Connor and DeMartino (2006), Robeson and O'Connor (2007)
	Outcomes	6 (23%)	Enkel and Sagmeister (2020), Keil (2004), Keil et al. (2008), Lai et al. (2010), Schildt et al. (2005), van de Vrande et al. (2011)
Hackathons	Antecedents	0 (0%)	
	Concept	2 (33%)	Feldmann and Teuteberg (2021), Pe-Than et al. (2019)
	Mechanisms	3 (50%)	Lodato and DiSalvo (2016), Lu et al. (2022), Pe-Than et al. (2022)
	Outcomes	1 (17%)	Ghosh and Wu (2021)
CWS	Antecedents	2 (22%)	Bouncken et al. (2020b), Spreitzer and Lyndon (2015)
	Concept	3 (33%)	Bouncken and Reuschl (2018), Howell (2022), Nagy and Lindsay (2018)
	Mechanisms	2 (22%)	Bouncken et al. (2021), Garrett et al. (2017)
	Outcomes	2 (22%)	Bouncken et al. (2020a), Wikham and Styhre (2017)
CI	Antecedents	0 (0%)	
	Concept	11 (48%)	Allen and McCluskey (1991), Becker and Gassmann (2006a), Becker and Gassmann (2006b), Carayannis and Zedtwitz (2005), Grimaldi and Grandi (2005), Hausberg and Korreck (2020), Koetting (2020), Kruft and Kock (2019), Mrkajic (2017), Tang et al. (2021), Zedtwitz and Grimaldi (2006)
	Mechanisms	7 (30%)	Aerts et al. (2007), Chen and Kannan-Narasimhan (2015), Dutt et al. (2016), Hughes et al. (2007), van Rijnsoever and Eveleens (2021), van Weele et al. (2020)
	Outcomes	5 (22%)	Barbero et al. (2012), Barbero et al. (2014), Gamber et al. (2020), Haugh (2020), Woolley and MacGregor (2021)

CA	Antecedents	0 (0%)	
	Concept	9 (75%)	Cohen et al. (2019b), Crișan et al. (2021), Kanbach and Stubner (2016), Kohler (2016), Moschner et al. (2019), Nesner et al. (2020), Pauwels et al. (2016), Shankar and Shepherd (2019), Urbaniec and Żur (2020)
	Mechanisms	3 (25%)	Mahmoud-Jouini et al. (2018), Hutter et al. (2021), Richter et al. (2018)
	Outcomes	0 (0%)	

A4. Example Interview Guideline: First Interview with Sourcing Manager

All interviews were conducted in German. This example is illustrative since the guidelines were continuously adjusted to reflect (i) the interviewees' role and respectively expected perspective on the matchmaking process as well as (ii) the progress and recent events within the matchmaking process.

Sequence: First interview with screening manager

Goal: Understanding the PA setup and matchmaking process

Setting: Virtual interview, 1 h

Ziele und Struktur des Interviews

1. TEIL 1 – Verständnis für Unternehmenspartner und Allgemeinen Prozess schärfen

2. TEIL 2 – Deep Dive pre Application Closing: Verständnis der Prozessschritte, die vor Bewerbungsschluss abgelaufen sind

3. TEIL 3 – Deep Dive erste Screening Woche: Selektionsprozess (nach Bewerbungsschluss): Erste Entscheidungen verstehen

4. TEIL 4 – Planung des Forschungs-Vorgehens (PowerPoint)

TEIL 1: ALLGEMEINES VERSTÄNDNIS

Kategorie	Fragen
Research setup	• *Präsentation zu Research Setup und Daten-Bedarfen*
I. Corporate Partner	• Welche Partner sind bereits seit mehreren Kohorten dabei, welche neu?
	• **Was sind d.E.n. die Ziele der einzelnen Partner, die Sie mit der Zusammenarbeit erreichen wollen (gibt es Cluster)?**
	• **Was ist deiner Meinung nach der Wertbeitrag von [PA Name] ggü. eigenem Accelerator?**
	• **Wer sind die Haupt-Ansprechpartner beim Unternehmen/aus welchen Abteilungen?**
	• Gibt es Unterschiede im "Engagement" der Partner im Startup Screening Prozess?
	• **Wie würdest du eure [PA Name] Beziehung zu den einzelnen Partnern beschreiben?**
	• Kann man bei einigen Partnern von einer Vertrauensbeziehung sprechen?
II. Verständnis Screening Prozess	• **Was ist das Ziel und das Ergebnis des Auswahlprozesses**
	Folgefrage: [PA Name] Startups & weitere Vermittlung an Corporates
	• **Ist der Prozess für alle Partner gleich?**
	• **Kannst du mit bitte nochmal durch die einzelnen Prozessschritte mit Start [Monat] führen?**
	◦ Was wird gemacht?
	◦ Wer ist beteiligt?
	◦ Was ist das Ergebnis?
III. Historische Betrachtung	• **Seit wann gibt es diesen systematischen Prozess?**
	• **Wie ist der Prozess entstanden – Techfounders getrieben vs. Corporate geshaped?**
	• Gibt es Veränderungen ggü. [voherige Cohorte] und was waren die wichtigsten?

TEIL 2: RÜCKBLICK PROZESSSCHRITTE VOR BEWERBUNGSSCHLUSS

Kategorie	Fragen
I. Vor Ausschreibung: Allgemein	**Allgemeines Verständnis** • **Kannst du die einzelnen Schritte in dieser Phase bevor die Bewerbung ausgeschrieben/live geschaltet wurde erklären?**
II. Vor Ausschreibung: Search Felder	• **Wie kamen die [Collaboration areas] zu Stande?** • **Gab es deutliche Unterschiede im Verlauf zwischen den Partnerunternehmen**? • In wieweit haben die Unternehmen klare Vorstellungen vs. Inwieweit gestaltet [PA Name] die Vorstellungen mit? • **Was waren die wichtigsten Erwägungen die die einzelnen Partner in die Definition haben einfließen lassen**? • Wer war seitens des Partnerunternehmens in die Definition eingebunden? • Warum gibt es so starke Unterschiede in der Spezifizität der Fields? o *[List collaboration areas per corporate partner]* • Gibt es viele überlappende Suchfelder und wie geht ihr damit um? • Haben Partner Search Felder nachgesteuert? • **Wie hast du den Prozess empfunden? Relativ smooth oder gab es holprige Stellen?**

III. Startup Outreach	• **Kannst du mir das Vorgehen beim Startup [Scouting] erläutern.**
	• Startups
	    o Wie viele Startups hast du kontaktiert?
	    o Gibt es eine "Ziel Anzahl pro Partner"?
	    o Nach welchen Kriterien bist du vorgegangen?
	    o Was sind deine Quellen?
	    o Welche Startups hast du kontaktiert? *Gibt es eine List oder Marker im Tool, an denen ich die kontaktierten Startups erkennen kann?*
	    o Waren die Partnerunternehmen in diesen Prozessschritt eingebunden? Und wie?
	• **Wie sprichst du die Startups an/ mit welchem Pitch/Argumenten?**
	• **Ist es schwierig die Startups zu überzeugen?**

Eindrücke Startup Outreach	• **Gab es überraschende Ereignisse im Ansprache-Prozess?** • **Gab es herausstechende Ereignisse in der Startup Interkation und welche (pos. oder neg. Eindrücke)?** • Wie waren die letzten zwei Wochen für dich? • **Haben sich durch den Outreach Startups herauskristallisiert, die besonders vielversprechend sind? Warum?** • **Ansprache und Bewerbungserfolg: Lief der Prozess besser/schlechter als üblich *(Jahre im Vgl.)*? Woran liegt das?**

TEIL 3: MOMENTANER SELEKTIONSSCHRITT (Woche 1 nach Bewerbungsschluss)

Kategorie	Fragen
Vorgehen	• **Kannst du mir die Schritte nach Bewerbungsschluss beschreiben?**
Fokus auf die Schritte in den ersten zwei Wochen nach Bewerbungsschluss	**Erstes Screening:** • Was ist das Ergebnis in dem Prozessschritt? • Wer ist involviert? Und wer screent welche Bewerbungen? • **Was sind die wichtigsten Kriterien beim ersten Screening von Bewerbungen?** • **Habt ihr Kriterien, oder einfach implizite Erwägungen, die ihr beim Matching macht und nicht in der Liste erwähnt sind?**

Fokus DEINE Entscheidungen im Screening	• **Wie gehst du persönlich beim Screening der Bewerbungen vor?**
	• Wie viel Zeit investierst du pro Bewerbung und was schaust du dir an?
	• **Auf welche Kriterien schaust du in der "kurzen Zeit" und wie misst du diese?**
	    o Bei der "allgemeinen Bewertung" des Startup-Fits zum Programm
	    Harte Kriterien: team, legal entity, functional prototype
	    o Bei der Bewertung des Startup Potentials
	    o Beim Matching zum Partnerunternehmen
	    o Weitere...
	• Wie würdest du die Relevanz der Kriterien gewichten?
	• **Was macht für dich ein richtig gutes Startup aus?**
	• **Wann passt für dich ein Startup besonders gut zu den Partnern [Namen Corporate Partner]?**
	• In wieweit gehen beim Matching zum Partner implizite Erfahrungen mit Partnern ein (aus Interaktion letzter Wochen oder letzter Jahre)?
	• **In wieweit gehen beim Screening deine Vorerfahrungen aus den Interaktionen mit zuvor angesprochen Startups ein?**
	• **Wie schätzt du diese [Kohorte] im Vgl. zu vorherigen [Kohorten] hinsichtl. z.B. der Startup Quali und des Corporate-Startup fits ein?**

Partner Vorschläge	**Erste Vorschläge für Partner** • **Wie entscheidet ihr welche Startups den Partnern im ersten Termin vorgeschlagen werden? Wie viel Diskussion im Team ist dabei?** • Habt ihr Zielvorgaben (z.B. Anzahl Startups pro Partner)? **Absprache mit Partnern** • **Was erwartest du von den Telefonaten? Eher Diskussion oder werden eure Vorschläge sauber angenommen?** • Welche Ansprechpartner sind im Termin dabei? • Was gebt ihr in die Termine mit den Partnern rein? • Was ist das Ergebnis der Abstimmung?

A5. Overview Corporate Sponsors across all PA Cohorts

Year	Cohort	Corporate Sponsor	Industry of Corporate Sponsor	# Startup Partners	Industry of Startup Partners
1	1	Corporate 2	Automotive	4	Consumer Digital, Enterprise Tech, Manufacturing
		Corporate 5	Automotive	2	E-mobility, Enterprise Software
		Corporate 6	Automotive	1	Autonomous systems
	2	Corporate 2	Automotive	3	AgriTech, Manufacturing
		Corporate 5	Automotive	1	Manufacturing
		Corporate 6	Automotive	1	Enterprise Tech
		Corporate 7	Machinery	2	Manufacturing
		Corporate 8	Insurance	1	Enterprise Tech
		Sponsor changes[15]: + 2, - 0			-
	3	Corporate 2	Automotive	3	Enterprise Software, Manufacturing
		Corporate 5	Automotive	2	Enterprise Tech
		Corporate 7	Machinery	3	Autonomous systems, Manufacturing
		Corporate 8	Insurance	1	Enterprise Software
		Corporate 9	Banking	1	Fintech
		Sponsor changes: + 1, - 1			-
2	4	Corporate 2	Automotive	3	Enterprise Software, Manufacturing
		Corporate 5	Automotive	1	Enterprise Tech
		Corporate 7	Machinery	3	Enterprise Software, Manufacturing
		Corporate 8	Insurance	2	Medtech
		Corporate 9	Banking	2	Fintech
		Corporate 10	Fashion	1	Consumer Digital
		Sponsor changes: + 1, - 0			-
	5	Corporate 2	Automotive	2	Enterprise Software, Medtech
		Corporate 5	Automotive	3	Enterprise Software, Enterprise Tech, Manufacturing
		Corporate 6	Automotive	1	Autonomous systems
		Corporate 7	Machinery	3	Cleantech, Manufacturing

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[15] Changes in the constellation of corporate sponsors to previous cohort: +X = number of new corporate sponsors joining the program; -X = number of churned corporate sponsors.

		Corporate 10	Fashion	1	Consumer Digital
		Sponsor changes: + 1, - 2			-
3	6	Corporate 2	Automotive	3	Enterprise Software, Enterprise Tech
		Corporate 4	Household appliances	2	Cleantech, Consumer Digital
		Corporate 6	Automotive	2	E-mobility, Manufacturing
		Corporate 11	Industrial Engineering	4	Cleantech, Manufacturing
		Corporate 12	Automotive	3	Autonomous systems, Consumer Digital
		Sponsor changes: + 3, - 3			-
	7	Corporate 2	Automotive	3	Enterprise Software, Manufacturing
		Corporate 3	Mobility	1	Transportation
		Corporate 4	Household appliances	1	Consumer Digital
		Corporate 5	Automotive	1	Enterprise Software
		Corporate 12	Automotive	2	Consumer Digital, Enterprise Software
		Sponsor changes: + 1 (+1 returning), - 2			-
4	8	Corporate 2	Automotive	1	Enterprise Software
		Corporate 3	Mobility	3	Autonomous systems, E-mobility, Transportation
		Corporate 12	Automotive	1	Consumer Digital
		Sponsor changes: + 0, - 2			-
	9	Corporate 2	Automotive	2	Consumer Digital, Data privacy
		Corporate 3	Mobility	2	Enterprise Software, Manufacturing
		Corporate 4	Household appliances	1	Enterprise Software
		Corporate 12	Automotive	4	Enterprise Software
		Corporate 13	Software	1	Cyber security
		Sponsor changes: + 1, - 0			-
5	10	Corporate 1	Retail	3	Sustainable products
		Corporate 2	Automotive	1	Manufacturing
		Corporate 3	Mobility	2	Autonomous systems, Transportation
		Corporate 4	Household appliances	1	Sustainable products
		Corporate 12	Automotive	2	Consumer Digital, Enterprise Software
		Corporate 13	Software	1	Fintech
		Sponsor changes: + 1, - 0			-

	11	Corporate 1	Retail	1	Sustainable products
		Corporate 2	Automotive	1	Manufacturing
		Corporate 3	Mobility	3	Cyber security, E-mobility
		Corporate 4	Household appliances	1	Autonomous systems
		Corporate 12	Automotive	2	Consumer Digital, Enterprise Software
		Sponsor changes: + 0, - 1			-
6	12	Corporate 1	Retail	3	Sustainable products
		Corporate 2	Automotive	2	Cyber security Manufacturing
		Corporate 3	Mobility	1	Cleantech
		Corporate 4	Household appliances	1	Manufacturing
		Corporate 13	Software	1	Enterprise Software
		Sponsor changes: + 0 (+ 1 returning), - 1			-
	13	Corporate 1	Retail	2	Consumer Digital, Sustainable products
		Corporate 2	Automotive	1	Enterprise Software
		Corporate 3	Mobility	1	Cyber security
		Corporate 4	Household appliances	3	Cleantech, Consumer Digital, Enterprise Software
		Sponsor changes: + 0, - 1			-

A6.   Example of Collaboration Area Template

[name collaboration area]

Primary Search Field
- Software Cybersecurity Testing
- Penetration Testing
- Vulnerability Management
- Cyber Risk Management
- Cybersecurity Monitoring

CyberRange/Simulator:
- Cybersecurity Simulator
- Cybersecurity Training
- Cybersecurity Laboratory

Related Search Terms/ Words
- Industrial IoT
- IIoT secure testing
- IIoT vulnerability management

Cyber Range/Simulator: For industrial control systems
- For CANOpen and/or rail protocols (e.g. TRCP)

Relevant Technologies
- Static Code Analysis
- Dynamic Code Analysis
- Fuzzing
- Vulnerability Scanning
- CANopen
- TRDP
- MVB (multi vehicle bus)

Cyber range/simulator
- White Hat / Ethical hacking
- Attack Scenarios
- Red/Blue Team Scenarios

Possible Application Fields
- Cybersecurity verifcation and validation of RVS devices
- For demonstration and training of cybersecurity threats, attacks, protection on control devices

Further Description/ Examples

• Binary and source code analysis

• Automated penetration testing or vulnerability scanning tools specific for rail protocols

Cyber range/simulator: Provides training and demonstration environment for practical attack/defence scenarios specific for industrial control systems

Example :   Example Startup

Possible Application Fields
- Non electronics components
- Simple (not manageable) electronics
- Cyber Ranges for normal IT security

A7.   Example of Social Media Communication of PA Towards Startups

A8.   Example PA Website Targeted at Corporate Sponsors

Currently, our corporate partners are [corporate 1], [corporate 2], [corporate 3] and [corporate 4]. Find out more why they love working with us

Key benefits

We connect our corporate partners with the most promising tech-startups in their innovation fields. Parallel to the 20-week [name accelerator] accelerator program, these carefully selected startups conduct a pilot project with our corporate partners

We offer corporate partners

We early view on latest developments in startup ecosystem

Access to most promising tech-startups

Fast-tracked co-development of innovative solutions

Branding, Public Relations & Marketing

Find out more

Our corporate partners

A9.   Overview Applicant Startup per Corporate Sponsor

Startup Demographics		Corporate 1	Corporate 2	Corporate 3	Corporate 4	Comment
Product development stage	Idea	3%	0%	0%	0%	*Most startups with first paying customers*
	First test users	17%	14%	24%	17%	
	First paying customers	**33%**	**32%**	**40%**	**44%**	
	In development	15%	23%	17%	7%	
	Scaling	32%	32%	19%	31%	
Funding stage, in EUR	none	15%	7%	14%	13%	*Startup funding amounts with spread, ~1/4 of the startups with 100–500k EUR funding*
	100k–500k	**24%**	**23%**	**21%**	**23%**	
	500k–1M	13%	20%	10%	11%	
	1M–2M	8%	11%	15%	7%	
	More than 2M	13%	11%	9%	9%	
	n/a	27%	27%	30%	37%	
Founding period, year relative to cohort investigated (n)	n	13%	5%	16%	11%	*60%–80% of the startups were founded between 1–5 years before start of the cohort*
	n-1 to n-2	**31%**	30%	30%	31%	
	n-3 to n-5	29%	**48%**	**33%**	**37%**	
	n-6 to n-10	11%	11%	8%	10%	
	n-11 to n-15	3%	0%	3%	3%	
	n/a	14%	7%	9%	7%	
Prior entrepeneurial support org. participation	No	42%	43%	36%	44%	*> 50% with prior participation*
	Yes	**58%**	**57%**	**64%**	**56%**	
Total startups		*150*	*45*	*105*	*110*	

A10. Example Startup Evaluation Tool Used by PA and Corporate Sponsors

[name accelerator] [cohort #] | applicants | dashboard | | **Customize widgets**
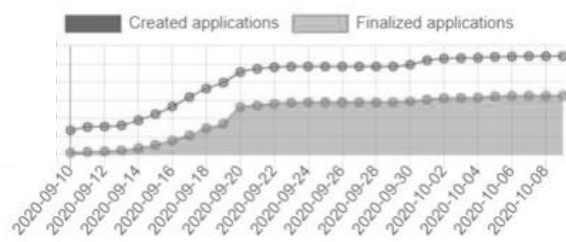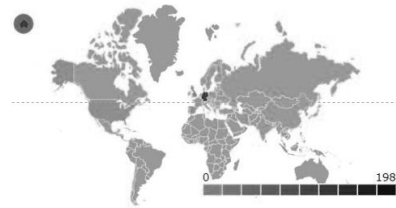
Evaluation Overview

~400	~400	0	0	0
applicants	Completed forms	Not Reviewed	Rejected	Accepted

Cumulative application count in last 30 days

Created applications   Finalized applications

2020-09-10 2020-09-12 2020-09-14 2020-09-16 2020-09-18 2020-09-20 2020-09-22 2020-09-24 2020-09-26 2020-09-28 2020-09-30 2020-10-02 2020-10-04 2020-10-06 2020-10-08

World

0   198

Tags to ratings distribution

Name corporate – search area

[name accelerator] [cohort #] | My | Compare | Columns | Order | Find startup

List of 75 Applicants

Name	Rating	Notes	Labels
Filter name	1 - 5	Filter notes..	Filter labels
Names applicant startups	Average ★ 4 Overall Rating ★ 4	Data Governance Platform basierend auf einem Knowledge Graph: Features beinhalten data quality, privacy, master data management data architecture, data stewardship: haben bereits erste zahlenden Kunden; gute Phase; würde ein interview call vorschlagen um zu sehen ob sie allen Suchfied Anforderungen nachkommen konnen	Search area
	Average ★ 1.5 Overall Rating ★ 1.5	No DLT activities so far at Open-Source-Framework, fur den Aufbau von Access Control Systems fur IoT- Ressourcen; 110 Mitarbeiter, 2M Funding und viele namenhafte Kunden [lagre corporates], aber non-profit Foundation	Search area
	Average ★ 4 Overall Rating ★ 4	Bieten einige verschieden KI-Lösugen an. Fur das [corporate name] Pilotprojeckt schlagen sie zwei mögliche Pilotprokeckte vor: Quality Inspection durch visuelle Fehlerkontrolle und DMS (Driver Monitoring System) mit einem System zur Uberwachung des Gesundheitszustandes als Fahrerassistenz; beeindruckende Referenziliste; 2015 gegrundet und > 8M Funding, konnten daher schon etwas zu weit fur [name accelerator] sein; schlage trotzdem einen Interview Call vor	Search area

A11. Example Matchmaking Process Performance Evaluation Document by PA

Our Application funnel in numbers

	name scouting provider				Other
~400 Applications	100 (22%)	20 (4%)	70 (16%)	20 (4%)	240 (53%)
50 Shorlist	20 (38%)	2 (4%)	10 (19%)	5 (10%)	15 (28%)
~15 Pitch Event	5 (30%)	2 (10%)	5 (30%)	0 (0%)	5 (30%)
Cohort #3	x	x	x	x	x

Including [corporate B] favorites, [accelerator name] contributed to more than 50% of the final candidates!
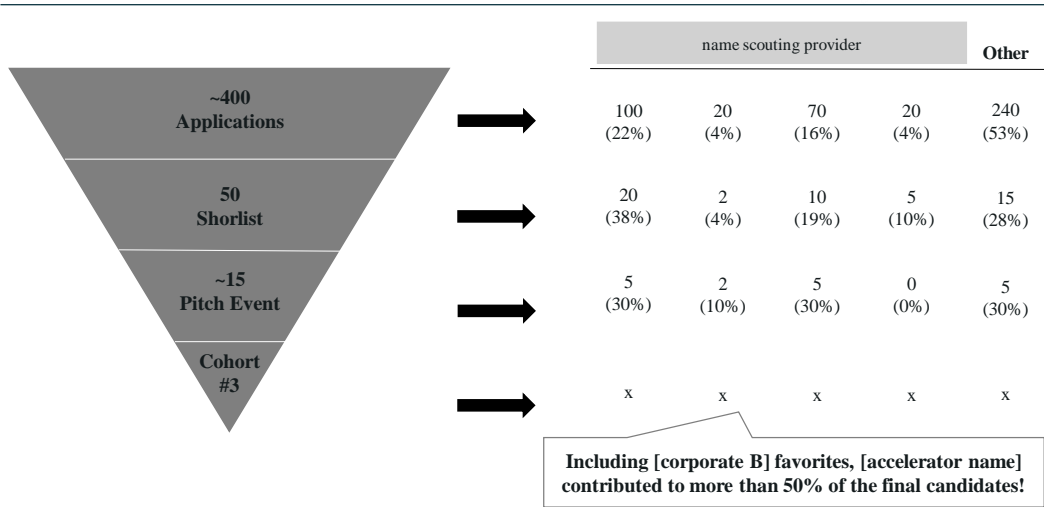
Overall search field scouting statistics

OVERALL CR

Client	Search field	Leads	#Applications	CR
names corporate	startup search area	116	7	6%
		119	5	4%
		272	25	9%
		59	29	49%
		84	6	7%
		59	9	15%
		116	5	4%
		90	9	10%
		93	23	25%
		144	1	1%
		43	7	16%
		68	16	24%
		97	36	37%
		114	21	18%
		91	16	18%
Miele	Room care & robotics	98	12	12%
Total		1663	227	14%

"search area" stands out with a 49% CR!

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A12.   Example PA E-mail to Attract Applications from Scouted Startups

Hi X,

My name is [scout name] and I am a scouting analyst at [name od PA], one of the leading PA programs in Europe for tech startups. I came across your website while screening potential startups for our new [cohort]. Your startup looks like a great fit for a [collaboration project] with our corporate partner [Corporate partner (website)] in the field of [name collaboration area].

We would be very happy if you considered applying for the upcoming [cohort], starting mid [timing cohort]. You would have the chance to work with [name PA] and win one of our industry leading corporate partners as your customer. You can start your application here: [link]. The application deadline is [day, month, year].

What are the advantages of taking part in our next [cohort]? With [name PA] startups have access to:

- Fast-track to a [collaboration project] with one of our leading industry partners, in your case [Corporate partner]

- [XX] EUR in cash (no equity, no strings attached)

- 5 months of free office space in [location PA]—however, no obligation to move to [location PA]

- Unique industry, mentor, and investor network

- Individual coaching and high-class mentors

- If you cannot move to [location PA], it is no problem. The program is designed in a way that only one member of your startup has to be present 3–4 days per month

In case you have more questions, we will be happy to help you during our online Q&A session every [day, time]. Just jump in here: [link] (no registration or requested access needed).

I look forward to receiving your application!

Best wishes,

A13. Example PA Rejection E-mail of Startup

Dear X,

Once again, thank you very much for your application to the [name PA] cohort [#] and for taking the time to talk about your solution during the pitch event. We have now completed the selection process with our partner [corporate] and eventually have come to a decision.

Unfortunately, we have to inform you that your company has not been selected to take part in the upcoming [cohort].

Please keep in mind that this decision is not related to the overall quality of your application and the interview/pitch, but rather to the timing of it. Your technology must fit to a specific use case that our partner [corporate] would like to conduct with you during the 20 weeks of the program. Sometimes your technology comes just a little bit too early for them. This having been said, the timing could be right for our next [cohort]!

Hence, please do consider applying to [name PA] in the future again, if it is still relevant to you. We regularly accept startups to our program that have applied multiple times before.

We are looking forward to receiving your application in the future!

All the best,